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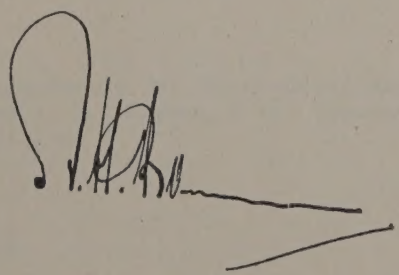
MRS EDNA CRANLEY

It is with the deepest regret that I have to announce the sudden death in Venice on 17 April 1950 of Mrs Edna Cranley, one of the most loyal and active members of the staff of the European Regional Office of FAO.

Although Mrs Cranley had many responsibilities as chief officer of the Information Division in Europe, the 'European Bulletin of FAO' was her special concern. Its Editor from the beginning, the Bulletin has always been regarded as her own creation and the progressive improvement number by number was due to her unremitting labours and keen perception of comparative values of material available for publication.

Mrs Cranley's first assignment with FAO was in Washington. In 1947 she transferred to Rome and the valuable part she subsequently played in developing FAO's work in Europe will long be remembered with appreciation and gratitude.



FOOD AND AGRICULTURE

THE FAO EUROPEAN BULLETIN No. 1

January — March 1950

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QUARTERLY PUBLICATION OF THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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COORDINATION OF AGRICULTURAL RESEARCH IN EUROPE

by **F. T. WAHLEN**
Director of the Agriculture Division of FAO

1. Principles of research administration and coordination

There are scientists who claim that research can only flourish and produce results in an atmosphere of absolute tranquillity and liberty, unhampered by administrative attempts to set directions and goals. There is a grain of truth in this statement, but it is by no means the whole truth. Coordination of research should never imply interference in detail and frustrating control of every man-hour spent in a research project. In the rare cases where genius is at work, fullest liberty should be granted. For the great mass of research and investigation in agriculture such as is carried out today, however, the case is different. Research projects are initiated under certain assumptions, certain hypotheses. They can be labelled according to the goals they wish to achieve and according to the methods by which it is intended to reach the solution.

In order to make the most of existing possibilities, obviously some understanding must be reached between research workers and research agencies on the priorities which should be established among the almost countless problems in need of solution, keeping in mind the limited means available, as well as on the distribution of the work among researchers and institutions. Scientists must learn to understand that the privilege of working for the progress of a profession, a nation and mankind in the field of science entails obligations. It is not a case of choosing between liberty and constraint, but each scientist should elect of his own free will the road of liberty which is in order. Where the spirit of cooperation reigns among scientists, the coordinator of research (who should be a scientist himself, or at least have been engaged in research work at some phase of his career) will find a fruitful field of activity.

2. National research – Coordination in agriculture

During the last one hundred years, science has revolutionized agriculture in all its manifold aspects. In all industrialized countries, agriculture can hold its own only by using all tools put at its disposal by modern techniques to increase the yield per unit of surface and per man-hour of labour spent. It is true that in most, if not in all countries, even those most advanced in agriculture, the fastest and most immediate increase in agricultural production can be achieved by improving extension and advisory services, and by generally bringing farm production methods into line with the knowledge which research has already yielded ; but, it is equally true that extension activities can only be kept alive and capable of rendering real service by steadily drawing inspiration from active investigation and research.

Because of the specialization in research work made necessary by the ever-widening field of science, most countries have long felt the necessity for coordination in research. Some means must be found by which specialists can be kept informed of work carried on by fellow-scientists prior to the publication of results in order to avoid duplication and waste, and in order to benefit from the work of others. The larger a country, the more numerous its agricultural research institutes, the larger the number of specialists, and the more specialized the individual worker, then the more acutely is the need felt for coordination. This is the obvious reason for the fact that in countries

like the U. S. A. coordination of research is no longer a subject for debate, but a generally accepted necessity. The necessary administrative apparatus is provided within the Department of Agriculture itself, and, through the allotment of funds and research personnel for the maintenance of research facilities in the individual states, it wields a decisive influence on the scope and direction of all phases of scientific work in agriculture. In Europe, most countries have created Agricultural Research Councils, National Committees of Agricultural Research, or other coordinating bodies working either in an advisory capacity or invested with certain executive functions.

There is no gainsaying the fact that effective coordination of agricultural research, even on a national basis, is a very difficult task. The executive or the body entrusted with it must have vision and the capacity to understand the often pronounced idiosyncrasies of the research workers. These workers in turn must be brought to understand the necessity for teamwork, and to abandon narrow personal ambitions in favour of common advancement. In this sense, coordination of research begins with the professional training of scientists in colleges and universities, and the existence of a broad spirit of cooperation in the laboratories and institutions where graduates receive their first professional appointments.

3. The case for international coordination of agricultural research in Europe

Two wars and an intervening crisis have robbed Europe at least in part of her former leadership in the field of agricultural sciences, and have impoverished her to such an extent that she finds it increasingly difficult to apportion the necessary funds for research. Fortunately, the role of science for the economic well-being of nations is better understood today than before World War I, with the consequence that governments and legislative bodies regard the outlays for research as an investment rather than an expense. In spite of this, budgetary contingencies in many countries make it impossible to allot sufficient funds for basic and applied research in agriculture. And yet, research has never been more necessary than it is today. The largest part of Europe's hard-currency deficit stems from the necessity for importing food and animal feedstuffs. Only research, aided by an intensification of extension work, can help to close this gap in a manner not harmful to the economics of Europe and the world as a whole. It is clearly the responsibility of governments and research institutions then to see that available funds and personnel are put to the best possible use. The most promising approach to this goal is the elimination of duplication and overlapping wherever they occur. Naturally, the first concern must be coordination on a national basis, but there is a strong case to be made in this field for a European integration if the Old Continent wants to hold its own and gradually to reconquer lost positions. The task need not be as difficult as would seem, *a priori*. A certain amount of coordination has already been achieved, due in part more to natural conditions than to voluntary effort. Thus for instance, in the field of plant breeding and seed production, certain small countries do not attempt to cover all crops, but concentrate their efforts on a few of which foundation stock seed or imported supplies are not available in the desired varieties, strains, or qualities. In these cases, a good organization for the current testing of new varieties produced in other countries is sufficient to give the farmers the benefit of the latest advance, and the funds and personnel which would be needed for national breeding programs can be concentrated on the solution of other problems. These in turn may be common to more than one country, and all of them can profit by the added efforts made possible through this concentration.

4. Possible ways of implementing and strengthening coordination

It is one thing to see the need for a certain action, and quite another to find a feasible solution. As stated above, coordination of research is often a difficult undertaking on the national level, and most countries realize that not all has been done within their own research facilities that could be desired. Obviously

then, international coordination is of necessity a long-term project, and must be approached cautiously. The following avenues of approach seem to be the most promising at the present time :

(*a*) The most natural and fruitful cooperation among scientists stems from personal contacts and the opportunity to discuss common problems. The knowledge that may be gained in a discussion with a fellow worker in another country, or from a symposium with colleagues may save weeks and months of laborious effort. For this reason, governments should give their research workers a reasonable amount of possibilities for such contacts. Due to the increasing necessity for specialization, it has become evident that rather small, informal gatherings of specialists are more fruitful than the big congresses still held for certain branches of science. FAO endeavours to provide facilities for such small meetings. In proportion to the total outlay for research personnel and the upkeep of laboratories and institutions, the costs for the attendance at such meetings is very small indeed. It is hoped that governments will increasingly come to regard this form of international cooperation as good investment.

(*b*) For the same reason, international or European scientific organizations should be encouraged. In their specialized fields they provide a splendid opportunity to discuss not only scientific questions as such, but also the existing possibilities to apportion certain phases of research work to designated individuals, institutions or countries. Splendid examples of such voluntary coordination could be cited in the fields of soil science, animal breeding, grassland improvement, biological control of plant pests, and so forth. These efforts deserve to be systematically registered, and even their present scope would be an encouragement to go further.

(*c*) It is the duty of intergovernmental agencies to foster further efforts in this field. FAO is giving this matter increasing attention, and encourages common and coordinated action wherever opportunities present themselves. In recent contacts with OEEC and ECE, renewed efforts have been made to avoid overlapping.

However, while on the secretarial level the road may be smoothed for a common approach to the problem, the decisive work must be done by the governments themselves. In this connection, the European Committee on Agricultural Technology can fulfil a most important function. It is the only existing body that includes in its membership list the personalities either directly responsible for the coordination of agricultural research in their countries, or called upon to play a leading role in the National Research Councils or corresponding committees. The time is ripe for a national stock-taking of coordinating activities and their efficiency. Out of such surveys would naturally grow a more definite outline of international coordination possibilities. FAO offers its services to contact international scientific organizations with a view to obtaining their more coordinated cooperation. This approach is facilitated through the fact that most of these organizations have lately become more closely linked to FAO by the appointment of their presidents to membership of the Standing Advisory Committee of the Agriculture Division. In some cases, the help of the National FAO Committees might be enlisted, and this subject will be discussed on the occasion of the forthcoming staff visits to a number of European countries.

It is fully realized by all those who know European conditions intimately that the attempted integration of the European national economies is a most difficult undertaking, and that it may never be fully realized. There are, however, a number of ways in which a fuller cooperation and a tangible economic relief might be brought about. Among these, coordination of research is one of the more promising.

Europe today should not only rebuild herself as quickly as possible, and recover as much of the ground she formerly held as is possible ; she is also called upon to play her role in the vast programme of Technical Assistance for Economic Development. At such a moment, no waste of funds or efforts is to be tolerated, and the European Continent is still in a position to make a formidable contribution towards both aims if the available forces in the field of agricultural science are marshalled for common and fruitful action.

RECENT ENSILAGE DEVELOPEMENTS IN DENMARK

by **EJNAR EBBESEN**
B. Sc., Agricultural Teacher, Naesgaard Institute of Agriculture.

The feeding of cattle — and particularly dairy cattle — in Denmark presents problems which are very difficult to solve. The climatic conditions make it necessary for the farmer to have sufficient feedingstuffs at his disposal for a winter period of not less than 200 days, and also to ensure that this quantity of feed contains the necessary protein, vitamins, etc.

It is possible by ensilage and artificial drying to produce fodder which is particularly suitable for winter feed. Both these methods of preservation have been known and used for very many years, although on a small scale only, but while ensiling in recent years has been increasingly adopted, artificial drying is not employed to anything like the same extent. Small quantities of lucern are dried for special purposes, for example, for the production of lucern meal for chicken- and pig-feed, but the comparatively high prices of fuel have hitherto prevented an extensive use of artificial drying.

Ensilage, however has become a more general practice. Although efforts were made to arouse an interest in ensilage — during and immediately after the first World War — it was the introduction of the A.I.V. method * in 1932 which led to a more extensive use of silage. The best indication of the widespread use of the A.I.V. method is the increasing sale of A.I.V. acid. Table I shows that the sale of A.I.V. acid has been constantly rising from 1932 to 1943. After 1943 it declined slightly due to the difficulty in obtaining raw materials, packing, etc.

TABLE I. — *Consumption of A.I.V. acid in Denmark*, 1932-47.

Year	*A.I.V. acid* 1000 *litres*
1932. . . .	7
1935. . . .	102
1939. . . .	224
1940. . . .	1,054
1943. . . .	2,171
1947. . . .	1,369

As the A.I.V. method is not the only ensilage method used, the sale of acid does not give an exact indication of the extent of ensiling. The enumeration of silos undertaken by the Statistics Department showed that ensiling in the last few years has become more common in Danish farming (Table II).

TABLE II. — *Number of silos in Denmark.*

Year	Farms with		Total	Total capacity of actual silos in cubic metres
	Silos of cement, wood, etc. (1)	Only earth pits (2)	1 + 2 (3)	(4)
1936	1,245	*	*	*
1941	6,122	*	*	183,000
1942	15,104	21,343	36,447	402,000
1943	21,632	25,369	47,001	515,000
1944*				
1945	27,101	20,315	47,416	631,000
1496	28,613	17,823	46,436	698,000
1947*				
1948	30,380	20,551	50,931	818,000
1949	35,142	26,288	61,430	1,077,000

* No figures available.

It is evident from Table II that an ever increasing use is being made of ensilage in Danish agriculture. While in 1942 only some 36,000 of Denmark's farmers, who number

* The A.I.V. method is founded on the principle that the detrimental decomposition processes in the fodder, above all the respiration of the plant cells, the breakdown of proteins, and harmful fermentations, such as those caused by Coli-bacteria and butyric acid bacilli, are prevented by the addition to the fodder, at the time of ensiling, of the requisite amount of acid which will raise the acidity of the mass to a point between *p*H 3 and *p*H 4 (Editor's note),

about 210,000, had the possibility of undertaking ensiling, the corresponding figure in 1949 had risen to 61,000 or about 29% of the total number of agricultural holdings. The number of agricultural holdings with silos has risen during recent years less than the number of farms with pits only but this is doubtless mainly due to the fact that the material for building silos has not been obtainable in sufficient quantities, so that many farmers, as a purely temporary measure, have used earth pits.

Crops for ensilage

Root tops are by far the most important forage for ensiling in Denmark. The area under root crops is 15% of the total agricultural area, and a rational utilization of the tops can only be obtained by ensiling.

Table III. — *Forage root crop area and estimated haulm production in* 1949.

	Area in ha.	Estimated Production		
		Tons of root tops per ha.	Total root tops in tons	Total crude protein in root tops in tons
Swedes	198,800	10	1,988,000	43,700
Mangolds	46,900	15	702,000	16,800
Fodder beets	117,600	20	2.352,000	56,400
Sugarbeets for fodder	23,400	25	585,000	14,000
Sugarbeets for factory	60,900	25	1,523,000	36,600
Total	447,600	—	7,150,000	167,500

Table III shows the area grown to different root crops in 1949, together with production estimates. According to these estimates the total yield of root tops in 1949 was well over 7 million tons. As Denmark has about 1.5 million dairy cows, this works out at about 5 tons of beet tops per cow. In practice, however, not all the tops can be utilized ; thus rutabaga tops may often be of a poor quality on account of mildew attack, but the Danish farmers have in root tops a feeding material which — properly treated — may supply a good contribution to the winter feed of the cattle.

Lucern, clover + grass and lupins are used to some extent for ensiling but hardly in such large quantities as beet tops. Boiled potatoes are ensiled to some extent for pigs' feed, and practically the entire waste from the sugarbeet factories which are supplied with the beet crop from about 60,000 ha.

Ensiling methods

As already mentioned, the A.I.V. method in Denmark has led to a more extensive application of ensiling, but even before the introduction of this method experiments and research on ensilage had been carried out, and since then rather extensive experimental work has been undertaken for the purpose of finding the most suitable ensiling methods for the different crops. The following is a brief summary of the results obtained.

Root tops. – Extensive experiments have shown that haulms can be ensiled entire and without the addition of other substances but that appreciably better results may be attained by ensiling with one of the following methods :

1. A.I.V. ensiling
2. Chopping of the tops
3. Chopping plus admixture of A.I.V. acid.

By way of example, the results of 2 series of experiments on ensiling root tops carried out at Naesgaard Agricultural School are given in Table IV.

Table IV. — *Ensiling loss and silage quality on ensiling root tops.*

	Number of experiments	Loss in		pH of silage	Ammonia N in percent of total N
		Dry matter %	Crude protein %		
Entire root tops :					
Without admixture	4	27.6	31.2	4.12	9.6
With 1 ½ % molasses added	4	26.6	27.5	4.06	8.8
With A.I.V. acid added	5	24.6	26.8	3.92	7.6
Chopped root tops :					
Without admixture	6	18.5	22.6	4.03	6.3
With A.I.V. acid added	6	16.9	15.4	3.80	4.4

It appears from Table IV that ensiling whole root tops without admixture produced the greatest loss in dry matter and crude protein, that the addition of molasses produced a slightly lower loss, and that the loss was lower on adding A.I.V. acid for the unchopped tops.

Chopping the root tops however, gave even better results. The loss in dry matter is only 2/3 of the loss caused by the ensiling of whole root tops, and as regards crude protein the difference is still greater. Table IV shows, as an indication of the quality of the silage, the *p*H and quantity of ammonia in per cent. N of the total amount of nitrogen. These figures show that the different ensiling methods produce the same proportionate variations for both silage quality and extent of loss in dry matter.

Therefore, it may be concluded from these and other Danish experiments that beet tops are best ensiled chopped* or with the addition of A.I.V. acid.

For lucern, lupins, clover and other crops with a high protein content ensilage according to the A.I.V. method has proved to be superior to all other methods hitherto tested. Table V shows the results of a number of experiments with sweet lupins.

The experiments were undertaken by the State Crop Experiment Station.

TABLE V. — *Sweet lupins ensiled with molasses and A.I.V. acid.*

	Number of experiments	Loss in dry matter %	Silage *p*H	Ammonia-N in per cent of total N
1 % molasses added; drainage	10	20.9	4.56	10.8
1 % molasses added; without drainage . . .	10	18.5	4.37	11.0
A.I.V. acid added; drainage	10	11.4	3.66	3.2

* For cutting the beet tops there are some very simple but effective machines which, with a power consumption of about 0.6 or 0.7 kWh per ton of beet tops, can treat from 7 to 10 tons of tops per hour.

In these experiments A.I.V. ensiling gave less loss in dry matter and better quality than molasses ensiling.

As regards other ensiling methods which have been tried in Danish experiments mention may be made of the use of formic acid which so far has not given such good results as A.I.V. ensiling, but the method is by no means without interest, as formic acid possesses certain advantages over A.I.V. acid. Ensilage with the addition of common salt and whey has also been tested, but both methods were found to be inapplicable. Ensiling according to the wilting method has only been tried on a very small scale.

USE OF SILAGE AS FODDER

For several years and, particularly since 1932, the Experimental Laboratory has carried out a number of experiments on silage. The purpose of the experiments was to investigate, among other things, the digestibility and feed value of silage produced by different means and from different crops. In addition, the laboratory undertook experiments on the effect of silage on the quality of dairy products, the vitamin content of the milk and other problems in connection with silage feeding. The following pages give an outline of the main laboratory findings.

The value of silage as fodder varies considerably ; it depends upon the feed value of the raw material and on the efficacy of the ensiling method. Figures in Table VI show the importance of the ensilage methods in a digestibility experiment with beet tops greatly soiled with earth. The tops were ensiled in two wooden silos without preliminary chopping ; in one silo the tops were ensiled without any admixture, in the other A. I. V. acid was added.

It appears from the table that A.I.V. silage is more digestible and has a greater feed value than silage without admixture when a greater silage loss on ensiling without A.I.V. acid is to be expected, the choice of the ensilage method may be decisive from the economic standpoint.

Table VII gives a number of examples of silage produced from different crops and accord-

ing to different ensiling methods. Although there may be differences these examples are fairly typical of the silage often obtained in practical farming.

TABLE VI. — *Digestibility of beet top silage with and without the addition of A.I.V. acid.*

Coefficients of digestibility for:	Silage made	
	Without acid	With A.I.V. acid
Crude protein	54	61
Raw fat	30	33
N-free extract	58	65
Fibre	70	72
kg. silage per feed unit	12.7	11.4
g. digested crude protein per feed unit	145	169
per cent. of sand in dry matter	38	44

The figures show that silage is a succulent fodder similar to fodder beets, potatoes and certain forms of factory waste. The protein content depends upon that of the raw material, but it will also be affected by the manner in which the ensiling has been carried out. According to the above figures, A.I.V. silage has, on the whole, a higher protein percentage that silage produced in any other way, and undoubtedly the greatest advantage of the A.I.V. method is that it preserves the protein better than other methods.

TABLE VII. — *The feed value of different kinds of silage.*

	Dry matter	For one Feed Unit		kg. silage for 1 starch equivalent *	g. digestible crude protein	
		kg. silage	kg. dry matter		per kg.	per F.U.
Lucern, young, A. I. V. added	20.7	7.1	1.47	10.1	32	229
Lucern, young, with molasses	20.3	7.9	1.61	11.3	14	113
Red clover, young, A.I.V added	17.7	7.1	1.21	10.1	24	170
Red clover, without acid.	16.9	10.7	1.70	15.3	13	133
Clover + grass, semi-early cut A.I.V. added	19.1	6.9	1.32	9.9	15	102
Clover + grass, semi-early cut, without acid	23.6	6.5	1.53	9.3	12	80
Sweet lupin, A.I.V. added	17.5	9.4	1.65	13.4	24	226
Sugarbeet tops, clean, A.I.V. added	22.3	6.4	1.44	9.1	27	170
Sugarbeet tops, dirty, A.I.V. added	21.3	11.4	2.44	16.3	15	169
Sugarbeet tops, fairly clean, chopped	10.9	7.6	1.45	10.9	19	145

* Approximate value, as 1 feed unit is equal to 0.7 starch value.

The neutralization of the acid content of A.I.V. silage is a very important question. Experiments have shown that feeding large quantities of A.I.V. silage may cause a rise in thermal energy in the animals, but this can be avoided if together with the silage the animals are given a corresponding quantity of beets, or if a supplement of about 6 g. of bicarbonate of soda is given with each kg. of silage.

The carotene content of the silage may vary. A few examples of Danish analyses are given below:

Silage of	mg. carotene per kg. of dry matter
Beet tops	35–165
Lucern	100–400
Clover+grass*	350–400
White clover *, very young, only leaves and leaf stalks	635

* Only a few analyses.

By way of comparison it may be noted that artificially dried lucern of good quality generally contains from 100 to 200 mg. of carotene per kg. dry matter.

In winter feeds the carotene content of silage may be very important. Thus tests undertaken by the Experimental Laboratory showed that cows given from 12 to 14 kg. A.I.V. lucern silage, late in the winter yielded milk with 25-30 International Units of vitamin A, while cows fed solely on roots, hay, straw, and concentrates yielded milk with only 10 to 12 I.U. vitamin A.

As an example of the use of silage for milch cows Table VIII shows the winter feeding plan for a farm where ensilage and silage feeding have been used for a number of years.

The average yield of Stensbygaard's whole herd — 123 cows — in the period from 1-10-1945 to 1-10-1946 amounted to 5,447 kg. milk with 4.29 per cent butterfat and 234 kg. of butter per cow.

Table VIII shows that even such a high yielding herd as this was able to consume very large quantities of silage in the daily ration. It is

also worth noting that the addition of oilcakes was only given to cows with a daily yield of 20 kg. and over.

TABLE VIII. — *Winter feeding plan at Stensbygaard* 1945-46.

Daily yield in 4 per cent butterfat milk kg.	Daily Feed in kg.				
	A.I.V. lucern silage	Sugar-beets	Hay	Grain	Oil-cakes
7.5 – 10.0.	19	24	2.5	0.5	0.0
10.0 – 12.5.	22	24	2.5	1.0	0.0
12.5 – 15.0.	26	24	2.5	1.5	0.0
15.0 – 17.5.	29	24	2.5	2.0	0.0
17.5 – 20.0.	32	24	2.5	2.5	0.0
20.0 – 22.5.	32	24	2.5	3.5	0.2
22.5 – 25.0.	32	24	2.5	4.0	0.4
25.0 – 27.5.	32	24	2.5	5.0	0.7
27.5 – 30.0.	32	24	2.5	5.5	1.0

It is characteristic of the winter feeding of Danish dairy cattle that roots constitute a rather large proportion of the total feed, but since beets, as is well known, are poor in protein, the necessary protein must be obtained by other means. Before the last world war this was done by means of oilcakes rich in protein. Consumption amounted to about 3/4 million tons annually in the late thirties, which in comparison with the size of the country was a very considerable quantity. Actually 30 feed units of oilcakes were consumed for every 100 feed units of beets.

When the world war stopped imports of oilcakes, protein had to be obtained in some other way. The ensiling of root tops, lucern and other crops rich in protein was one of the expedients — which was found to be nearest at hand. The markedly increased interest in ensiling which thus arose continued after the war, and it may be presumed that ensiling — particularly of beet tops and crops rich in protein will assume still greater proportions in the future.

ANIMAL FEEDING STUFFS IN THE UNITED KINGDOM

by **L. PLIATZKY**
Ministry of Food - United Kingdom

Animal feeding stuffs are often described as the raw materials of the livestock industry. To produce finished products, such as meat, milk, eggs and wool, you must have the feeding stuffs for processing and conversion by the animals. The analogy must not be pressed too far, of course; every farmer knows that his animals cannot be treated like machines. The point which is relevant here is that the United Kingdom has set herself the job of producing more finished agricultural products than before the war while importing far less raw materials in the shape of feeding stuffs from abroad.

Before the war British livestock production was to a large extent dependent on imported feeding stuffs. Of roughly 12 million tons of concentrated feeding stuffs consumed in Britain in a pre-war year (that is, excluding bulky fodder such as grass, hay and root crops), nearly 9 million tons were imported, consisting largely of coarse grains and oilcakes or oilseeds for crushing. During the war imports of feeding stuffs were cut down to negligible figures, to save shipping space. It took less shipping space to bring in, say, a ton of meat than to bring in several tons of feed required to fatten cattle to produce that ton of meat in Britain. For the war period Britain's reduced resources of feeding stuffs were concentrated mainly on milk production. Then and now it has been one of the prime aims of food policy to provide a full supply of milk, especially for mothers and children, at reasonable prices which all can pay. Sheep and beef cattle took second place, and the numbers of pigs and poultry had to be reduced severely.

Since the war imports of feeding stuffs into the United Kingdom have been increasing. For instance in 1945/46 less than half a million tons

of coarse grains were imported, but in 1948/49 the figure was about $2^1/_2$ million tons. This is still far below the figures of pre-war imports, and whatever further increases there may be in imports, no one in Britain expects to see imports of feeding stuffs on anything like the pre-war scale.

The reasons for this do not need much looking for. The growth of the world's population, and rising standards of living in backward countries — rising standards which Britain wishes to help, not to hinder — mean less surpluses of feeding stuffs available from some of the major pre-war exporting countries. Apart from the problem of supply, there is the very difficult problem of payment for supplies. Some of the countries which have large quantities of feeding stuffs to export are dollar countries, or other hard-currency countries. Dollar saving is as important as dollar earning, and it is part of Britain's contribution to her own and to European recovery and prosperity to be as economical as possible in spending dollars.

How, then, with far smaller imports of feed is Britain to achieve her increased production of food for human consumption, an achievement towards which she is already on the way? For already there are record yields of milk and there are more poultry than before the war. There are still far fewer pigs and sheep than before the war, and there is far less home-killed beef, but good progress is being made.

The answer to these questions may be summed up under the following headings:

Increased production of feeding stuffs in Britain.

Improved efficiency in the use of feeding stuffs, the breeding of more efficient animals, and better control of animal disease.

Fair and economical distribution of feeding stuffs to farmers.

There is not space in an article of this kind to deal fully with each of these points. As regards the first of them, mention may be made of big increases in traditional crops such as oats, and of the start that has been made in developing crops such as linseed, which has never before been grown on a big scale in Britain. Above all a great deal of research and technical advice is being provided by the Government to improve the growing and use of grass, the prime natural food for sheep and cattle. Farmers are encouraged to develop silage making from grass and other green crops, and production of dried grass meal is taking place on an increasing scale. The improvement of grassland involves the use of increased quantities of fertilizers, but these are more readily obtainable than feeding stuffs. The primary use of these materials is for feeding and fattening sheep and cattle, thus leaving more cereals, and other less bulky fodder, for increased numbers of pigs and poultry.

Improvements of efficiency in the use of feeding stuffs are promoted by the joint efforts of farmers, processors of feeding stuffs and Government Departments. Similarly Government research assists the farmers' own efforts to breed more efficient animals, and contributes towards the better control of animal disease, for example through vaccination. Arrangements are made to ensure that scarce feeding stuffs are best used by their inclusion in balanced compounds, and farmers draw by far the larger part of their rationed feeding stuffs in the form of compounds.

The rationing of animal feeding stuffs in the United Kingdom was introduced in 1941, and still remains in operation. The system, in brief, is as follows, with modifications to suit local conditions in Scotland and Northern Ireland. Responsibility for its working is shared by the Ministry of Agriculture and the Ministry of Food.

With the exception of dried grass and bulky fodder such as hay and root crops, all important feeding stuffs are rationed. These include, of course, home-grown cereals and pulses, and wheat offals from flour produced in Britain, as well as oilcakes which are nearly all imported or made from imported oilseed. A farmer may if he wishes, keep for feeding to his own livestock all the cereals and pulses that he grows on his own farm, except wheat. He can only keep 25% of his wheat; he must sell the rest to Government controlled flour mills. But many farmers who grow cereals and pulses do not use them all for their own livestock; what they do not use, they must sell into the ration pool, that is to an approved buyer, who resells either to the Ministry of Food or to private traders and processors included in the rationing scheme. All feeding stuffs from abroad, which are imported by the Ministry of Food, and all by-products of the manufacture of human food which may be fed to animals,

such as the by-products of flour milling — all these also go into the ration pool. The warehouses and depots at the main ports are organized as stores for holding stocks for the ration pool, to be released only on instructions from the Ministry of Food.

While some farmers do not use all the feeding stuffs they grow, others need more than they grow. They can get additional supplies only against coupons entitling them to obtain feeding stuffs from the ration pool. These coupons are issued to the farmers by local officials responsible to the Ministry of Agriculture. The issue of coupons is made according to standard ration scales. In some cases the rations are related to the quantity of, say, milk, eggs or pig meat produced by the farmer and sold by him through the proper channels. In other cases the rations are related to the number of animals kept. The farmer buys his rationed feeding stuffs from a licensed trader or processor, who in turn has to pass ration documents on to get his supplies from the ration pool.

The prices of feeding stuffs are all controlled, and were subsidized by the Government while prices of imported feed were rising, to prevent runaway increases in the costs of farming. These subsidies have this year been reduced, but not removed entirely. The prices the farmer receives for his milk, eggs, meat and so on are also controlled, and they are related to the prices of feeding stuffs and other farming costs. In this way the farmer is sure of a fair return on his labour, but at the same time there are no excessive profits.

Nobody in Britain likes controls for their own sake, but it is generally agreed that, while imports of feeding stuffs have to be restricted because of shortage of supplies or of dollars, their distribution has to be controlled to some extent at least. There is the usual Government machinery for enforcing these controls, but the system rests to a large extent on the self-discipline and co-operation of the farming community and of feeding stuffs traders. The system has worked well both during and since the war, and the farmer is sure of getting his rations at the controlled prices.

It must be noted that the mere existence and need of a rationing system indicates that supplies of feeding stuffs are still not enough to meet all demands for them. However much she may increase her agricultural output, Britain cannot hope to be self-sufficient in food and feeding stuffs.

She will always need to import additional supplies, and to pay for them by her exports of industrial goods. Imports from hard-currency countries will almost certainly have to be restricted severely for some considerable time to come, but Britain will naturally be in the market to buy any feeding stuffs of suitable quality available from those countries with which her balance of payments is more favourable. These of course include the whole of the sterling area and nearly all the countries of Western Europe.

SOME RECENT DEVELOPMENTS IN FEEDING AND MANAGEMENT, NUTRITIONAL REQUIREMENTS AND CONCENTRATE RATIONS FOR DAIRY CATTLE

by **E. BROUWER**

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1. Economy of animal production

It has been known for many years that only a fraction of the energy in the digestible nutrients or even of the available energy is recovered in animal products. Leitch and Godden [1], for instance, arrived at the conclusion that in Great Britain, under conditions of adequate feeding, only 8.7 per cent. of the energy in the digestible nutrients eaten by the total livestock would be recovered in milk, meat, fat, eggs, etc. In my opinion this low percentage is one of the most important problems of animal husbandry. For, an increase of only one per cent, e.g. from 8.7 to 9.7 per cent, would be of tremendous importance to

1 Leitch I., Godden, W., Imperial Bureau of Animal Nutrition, Technical Communication N° 14 (1941).

the welfare of the people in Great Britain as well as in other countries.

With good dairy cows, however, this percentage is considerably higher. In a cow, for instance, producing 5000 kg. of milk in one year it is about 30 per cent. Still, this represents a loss of more than two-thirds of the 'digestible' energy.

2. High and low yielding animals

Though not fully realizing the above-mentioned figures dairy cattle breeders have always been aware that in high yielding cows the economy of production is considerably higher than in low yielders so that the utmost importance is attached to heavy milkers.

That this is quite reasonable can be concluded from the following examples. Suppose four adequately fed cows produce 0, 2000, 4000 and 6000 kg. of milk in one year, then the milk output of these animals will contain successively 0 per cent, 16 per cent., 25 per cent. and 32 per cent. of the 'digestible' energy. The following example is also instructive — we compare a cow weighing 600 kg. and producing 3000 kg. of 3 per cent. milk in one year with a second animal of the same live weight producing 6000 kg. of 4 per cent. milk in the same period. In this case, under conditions of adequate feeding the percentages of energy output in milk will be 21 per cent. and 33 per cent, thus, considerably different. With increasing milk yield the percentages rise still further, but at a slower rate, for with a production of 10,000 kg. of milk the percentage would only rise to 38 per cent.

As a matter of fact these yields can only be obtained by animals in perfect health. It is therefore equally reasonable that the successful breeder aims not only at high production but also at the perfect health and faultless constitution of his animals.

3. Importance of feed for maintenance

It is well known that the heat losses in animal production result from two causes: maintenance requirements and energy losses in milk formation. In a cow, for instance, producing 14 kg. of milk a day half of the 'digestible' energy in her feed is lost for maintenance requirements. The second half is used for milk formation, but only two-thirds of this half or somewhat less is recovered as milk energy while one-third or a little more (that means 1/6 of the total quantity of 'digestible' energy) is lost as heat. The loss through maintenance requirements is therefore three times as high as the loss in milk formation. Therefore, in dairy cattle as well as in other domestic animals much more attention should be paid to maintenance requirements than hitherto.

4. Starch equivalents and total digestible nutrients

The energy for maintenance is primarily produced by roughage. It is true, however, that the feed value of roughages is, contrary to concentrates, misknown. This is evident from the marked differences in the evaluation of roughages. In the following table[1] for instance calculations have been made for starch equivalents (S.E.) and total digestible nutrients (T.D.N.). With every feed the same figures for total composition and for digestibility have been used in both calculations (S.E. and T. D.N.).

	S.E.	T.D.N.
maize	81.5	82.9
wheat offals	73.1	75.4
coconut cake	76.5	76.5
palm kernel cake	70.2	70.1
meadow hay (good quality)	30.9	48.3
grass silage	10.4	16.5
mangolds	6.3	9.4
oat straw	16.9	39.8
winter barley straw	10.6	35.3

While the figures for the concentrates are practically equal, for the roughages the discrepancies are obvious, especially for the two kinds of straw. A new approach to the feeding value of roughages, therefore, appears very important. This applies especially to conditions in Europe, where concentrates are much more expensive than home-grown roughages.

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1 Brouwer E., Voeding 10 (1949) 8.

As the digestibility of roughages is fairly well known as the result of numerous digestion trials, in future experiments special attention should be paid to their net energy for maintenance.

5. Digestibility of roughage

Though net energy for maintenance is the main problem, still there is a great deal of information needed on digestibility. Several authors have given formulas for estimating the digestibility of roughages from the figures for protein and crude fibre with the aid of regression equations. Though in this way some results have been obtained, more precise methods are greatly needed. Many authors have therefore tried to use figures for lignin content for estimating digestibility of dry matter in roughages. Axelsson[1] maintains however, that so far this method has not made for greater accuracy. In my opinion the problem cannot be solved by statistical methods only ; more fundamental work is also needed.

Kuhn, Kellner and their contemporaries were fully aware that a wide nutritive ratio impairs digestibility of protein and to a less marked extent also that of crude fibre and nitrogen-free extract. These facts have been repeatedly confirmed, for instance, in the recent experiments of Burroughs *et al.* studying the influence of maize starch additions on digestibility of roughages. This influence proved to be very variable and depended not only upon the nutritive ratio but also on the kind of roughage. In the opinion of Burroughs *et al.*[2] this can be explained best by assuming that besides protein there are other unknown nutrients essential for the growth of micro-organisms and for efficient microbiological activity in the alimentary tract. In a short communication[3], it is announced that such nutrients would be present in alfalfa ash and alfalfa water extract, both additions improving the digestibility of corn cobs incorporated in a ration with starch, dried skim milk, minerals and vitamins.

Though, in rations for milk cows, the nutritive ratio comes within a range where no depression of digestibility is to be feared, still we should realize more and more that the nutrition of dairy cattle is not merely a question of feeding the cow, but also a question of feeding properly the cellulose-splitting bacteria and perhaps many other species of useful micro-organisms in the alimentary tract.

6. Reducing concentrates for production

Although much work on digestibility has still to be done, we should not forget that with the guidance of figures for total composition and digestibility great improvement in nutritive value has already been obtained with the cultivation and conservation of roughage (grass, hay, silage, artificially dried grass). The result is that nowadays the roughage of the ration procures not only feed for maintenance but, in addition, feed for part of the produced milk, so that the quantity of concentrates can be considerably reduced and can partly be substituted by much less expensive home-grown roughage. Thus, in the Netherlands, even before the war the dressing of grassland and early cutting of the grass for hay, for silage and for artificially dried grass, considerably reduced the quantities of concentrates needed in cattle feeding and, during the war, prevented the milk yield from declining more than it did. In the experiments of Dijkstra[1] cows yielding daily up to 16 kg. of milk remained in fairly good condition with a diet of only hay, grass silage and artificially dried grass. They produced only slightly less milk and butterfat than other cows receiving a ration consisting of hay and 4 to 5 kg. of a concentrate mixture. The live weight of the group fed only with grass products declined slightly in comparison with that of the control group.

However favourable these results may be, it is highly probable that better knowledge not only of the total composition and the digesti-

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1 Axelsson I., Fifth International Grassland Congress (discussion) (1949).

2 Burroughs W., Gerlaugh P., Journ. animal Sc. 8 (1949) 3. Burroughs W., Gerlaugh P., Edgington B.H., Bethke R.M., Journ. animal Sc. 8 (1949) 9 ; 8 (1949) 271.

3 Burroughs W., Gerlaugh P., Bethke R. M., Journ. animal Sc. 7 (1948) 522.

1 Dijkstra N.D., Verslagen landbouwkundige onderzoekingen 49 (1943) 29.

bility of roughage, but especially of its net energy for maintenance as well as for production would enable us to make further progress.

7. Variability of maintenance requirement of energy

Until now we have considered more especially the feed, assuming that the maintenance requirement for a cow with a given live weight can be calculated with reasonable accuracy with the aid of the formulas in text books. Some observations indicate, however, that the maintenance requirement shows considerable variability, not only in different cows, but even in the same cow in different periods. The well known investigators Benedict and Ritzman,[1] for instance, stated that the fasting metabolism may vary as much as 30 to 80 per cent. within a period of two months. Maynard,[2] discussing these results, points out that these variations are important, because the possibility of wide variations obviously must limit the general application of determined values. In my opinion still more important is the study of the *causes* of these variations, for this study may procure a means of reducing the maintenance requirement of the animals and in this way may lead to a more economic production.

8. Reduction of maintenance requirement by artificial means

A gland with a powerful stimulating action on the basal metabolism and maintenance requirement is the thyroid and, therefore, many attempts have been made to reduce its activity by total or partial thyroidectomy or by administering drugs like thiourea, thiouracil and their derivatives. However promising for some kinds of domestic animals, the results have been disappointing for milk cows, because by depressing the thyroid activity not only is the maintenance requirement reduced but at the same time the milk yield. Therefore, what is gained on one hand is lost on the other. Moreover, in Netherlands experiments conducted by Frens,[1] working with two groups of dry fattening cows, the results of weighing different parts of the bodies after slaughtering revealed only a slight difference in fatness of the carcasses in favour of the experimental group getting methyl-thio-uracil, notwithstanding that before slaughter a considerable difference in live weight had been noted. Further observations showed that 50 to 70 per cent. of the extra live weight had to be ascribed to accumulation of food in the rumen, probably as a result of diminished irritability of the vagus nerve. Thus, the results were not promising, even with dry cows. As far as milking cows are concerned there is still the question of the toxicity of the produced milk, a problem that has not yet been solved for drugs like thiouracil, etc.

9. Artificial stimulation of milk production

We saw that reducing thyroid activity inhibits milk production. On the other hand *increased* thyroid activity *stimulates* milk secretion. It is clear that also in this way more economic results might be obtained provided that increase of maintenance requirement and heat loss in milk formation remain within reasonable limits. Therefore, numerous attempts have been made with milk cows by administering iodinated casein and other iodinated proteins containing the thyroid hormone thyroxin. Indeed, with the aid of these inexpensive drugs, milk production increases considerably. Fat percentage rises too, the increase usually appearing at lower levels than the rise of milk yield. The hormone is not transmitted to the milk.

As might have been foreseen the metabolism rate increases at the same time. Exact measurements of the heat production in milk cows receiving iodinated casein have, as far as I know, until now only been made by Thorbeck *et al.*[2]. Their results are, however, disappointing. The increase in heat production was so considerable that the surplus of milk

[1] Benedict F.G., Ritzman E.G., Proc. Nat. Acad. Sc. 21 (1935) 304.
[2] Maynard, L.A., Animal Nutrition (1947).

[1] Frens, A.M. Landbouwkundig Tijdschrift (in press).
[2] Thorbeck, G., Hansen, I.G., Moustgaard, J., Journ. an. Sc. 7 (1948) 291. Moustgaard, J. Thorbeck, G., Beretning 240 fra Forsøgslaboratoriet (1949) 5.

required about 0.75 starch equivalents per kg. fat corrected milk, which is approximately three times the normal. The aforesaid Danish authors consider the administration of iodinated casein to normal cows as uneconomic, at least if given in such high doses as in their own experiments.

Nevertheless, in a comprehensive review BLAXTER *et al.*[1] conclude that on the basis of present information it appears that thyroidally active iodinated proteins could be used profitably during periods of milk scarcity to stimulate production for periods of about two months. Naturally they must be accompanied by an increase in nutrient intake to support both the increased metabolism and the increase in production.

The authors maintain that under good conditions of feeding and management and proper regulation of dosage, iodinated protein could be used in commercial herds for more extended periods. Until more information is available on the long-term effects, the use of iodinated protein in pure-bred breeding herds would appear questionable. In their opinion much further research is needed on the relation between iodinated protein dosage and nutritive requirements for essential minerals and vitamins, as well as for energy, on a scale extending from the minimum effective dosage level up to the point of excessive stimulation.

In the Netherlands SCHUURMANS,[2] on the basis of practical experiments, maintains that his results are quite different from those of THORBECK *et al* as, in his opinion, by giving moderate quantities of iodinated casein the economy of production is not less than without this drug. Indeed, the quantities of the drug given by THORBECK *et al.* in most of their experiments are undoubtedly far too high. It also should be mentioned that in one of the Danish experiments with halved dose of iodinated casein the energy waste was markedly less than in the other experiments, even if, on the other hand, it still materially exceeded the normal heat production. Yet, SCHUURMANS, thinks that under present conditions the profit of feeding iodinated casein is not such that any risk is justified.

From all the available information we may conclude that, if profitable at all, only small non-toxic doses of iodinated casein can be taken into consideration.

Recently a new line of approach has been initiated by MØLLGAARD who has advanced the theory that the metabolic rise and the increased milk secretion are due to two different hormones in the thyroid gland. He is of the opinion that there are also two different factors in iodinated casein, one being thyroxin which affects the metabolism and the other affecting the milk secretion as well as the diuresis. POULSEN[1] has given some experimental support to this hypothesis. It should, however, be mentioned that this view is perfectly contrary to that of BLAXTER *et al.*, who state that hitherto all experimental work shows that there is no difference between the effects of thyroxin and iodinated protein feeding as far as lactation is concerned. Nevertheless, if MØLLGAARD's hypothesis proves to be correct, important new prospects for practical application are opened.

10. REDUCING PROTEIN STANDARDS

Formerly, in the Netherlands, protein-rich concentrates were not much more expensive than protein-poor feeds with equal net energy content. In the post-war period, however, protein should be used as little as possible for supplying energy but only for satisfying specific needs in nitrogen compounds. For many years the standards used in this country have been those of LARS FREDERIKSEN[2] who had based them on extensive experiments with hundreds of dairy cows in Denmark.

The quantity of protein in these standards is greater than in most others. They require 500 g. of digestible true protein or 700 g. of digestible crude protein per 1000 kg. of live weight for maintenance and 60 g. of digestible true protein or 70 g. of digestible crude protein

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1 BLAXTER, K.L., REINEKE, E.P., CRAMPTON, E.W., PETERSEN, W.E., Journ. animal Sc. 8 (1949) 307.
2 SCHUURMANS, D. Landbouwkundig Tijdschrift 61 (1949). 586.

1 POULSEN, E., Beretning 240 fra Forsøgslaboratoriet (1949) 47.
2 FREDERIKSEN, L., ØSTERGAARD, P.S., Beretning 136 fra Forsøgslaboratoriet (1931).

per kg. of 4 per cent. F.C.M. (fat-corrected milk). From both the experiments of FREDERIKSEN himself and from the Netherlands investigations it can be inferred that in periods of protein shortage there is little danger in reducing by 10 per cent. the quantities required for milk production. Even in this case the quantities may seem to be liberal. A further reduction, however, seems to be unwise for Netherlands conditions. Taking into account the relatively high protein content of Netherlands hay, grass silage, etc., a further reduction would dispense with oilcakes on many farms practically entirely and we feel that we should not do away with oilcakes completely because of some not clearly defined specific effects of these feeds.

A further improvement of these standards refers to the protein requirement for maintenance. FREDERIKSEN advised procuring protein proportionate to the live weight, as opposed to starch equivalents, which were recommended to be given in amounts nearly proportionate to the body surface. However, taking into account the result of more recent experiments, it is advisable to feed also protein in quantities proportionate to the 2/3 or 3/4 power of the live weight. This can be attained with reasonable accuracy by feeding 0.1 times as much digestible true protein or 0.14 times as much digestible crude protein as starch equivalents.

Condensing the above-mentioned propositions in simplified formulas resembling those of FREDERIKSEN we get

$$\text{kg. S.E.} = \frac{W}{300} + 1 + 0.28 \text{ F.C.M.}$$

$$\text{g. D.T.P.} = \tfrac{1}{3} W + 100 + 54 \text{ F.C.M.}$$

$$\text{g. D.C.P.} = \tfrac{1}{2} W + 120 + 63 \text{ F.C.M.}$$

In these formulas S.E. = starch equivalents D.T.P. = digestible true protein ; D.C.P. = digestible crude protein ; W = kg. live weight; F.C.M. = kg. fat-corrected milk 4 per cent.

In the future, further reductions of protein provisions will undoubtedly be possible by taking into account the contents of essential amino acids in the feed. Our knowledge on this point is extending rapidly through the use of newer methods of amino acid determination based on microbiological and chromatographic principles. In the Netherlands DE MAN[1] composed by compilation a table containing the amino acid contents of several feeds. The digestion process of ruminants is however so very complicated that further extensive research will be necessary before practical application can follow.

11. NON-PROTEIN NITROGEN (N.P.N.)

A further reduction of the natural proteins in the feed might be possible by feeding part of the nitrogen compounds in the form of non-protein nitrogen (urea, ammonium salts, etc.). Several authors had good results with these products, especially in growing animals. The results of WILLMAN *et al.*[2] with fattening lambs, however, were disappointing.

Feeding experiments during the war in the Netherlands[3] with some hundred dairy cows were also unsatisfactory. Loss in weight of the control animals not receiving N.P.N. did occur when the protein intake was reduced to 70 per cent. of the standard, and a reduction of 60 per cent. was necessary to affect the milk yield.

The loss in live weight and milk yield could only partly be prevented by the giving of N.P.N. The effect of a given amount of nitrogen in natural feedstuffs was better than twice this amount as urea and ammonium lactate. In our opinion, therefore, urea and other N.P.N.-products are only to be recommended in cases of extreme protein shortage.

12. SUMMARY

In animal production only a rather small percentage of the 'digestible' energy of the feed is recovered in the animal products. Although with milk cows this percentage is higher than with most other domestic animals and though the greater the milk production the higher it is, still, even with deep milking cows, the total energy losses are considerable (about

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[1] DE MAN ,T.J. Tijdschrift voor Diergeneeskunde 74 (1949) 677.

[2] WILLMAN, J.P., MORRISON, F. B., KLOSTERMAN, E.W., Cornell Agric. exp. Stat. Bull. 834 (1946).

[3] BROUWER E., FRENS, A.M. STONEBRINK, B., Verslagen Landbouwkundige Onderzoekingen 49 (1943) 408.

2/3 of the total quantity of 'digestible' energy in the feed).

No less than about half of this total quantity of 'digestible' energy is lost in the maintenance requirement of the animals and is mainly derived from home-grown roughages. There exists, however, a great deal of uncertainty about the evaluation of the nutritive value of roughages, the total dgiestible nutrients system estimating them much higher than the starch equivalent system. A new approach to the feeding value of roughages is therefore very important. This applies especially to the net energy for maintenance and for production and to a minor degree also to digestibility as related to microbiological activity in the alimentary tract.

In the Netherlands by improving the methods of cultivation and conservation of roughage its nutritive value has increased appreciably so that the concentrates in the ration have been reduced to a large extent.

A discussion is given bearing upon the variability of maintenance requirements. Attempts to reduce the maintenance requirement of milk cows by giving drugs did not give better economic results because the milk yield is reduced at the same time. Stimulation of the milk yield by iodinated casein entailed an increase in metabolism. If profitable at all, only small non-toxic doses of iodinated proteins can be considered for administering to milk cows.

Improved formulas are given for the calculation of the protein requirements for maintenance and for milk production.

Urea and other non-protein nitrogen products are only recommended for milk cows in cases of extreme protein shortage.

A PROGRAM FOR THE TIMES

by **LAIRD ARCHER**
Foreign Director, Near East Foundation

If in 1930 the public spirited men in the United States who launched Near East Foundation, as the successor of the well known Near East Relief, had foreseen present conditions in the world they could not have created an organization or a program more adapted to meet the needs of today.

The flexibility of the organization and its ability to adjust itself to successive periods of crisis and swiftly changing conditions have made it possible for the Foundation to render many and varied services. This is especially true during the present period of adjustment and rehabilitation which has followed the destruction, dislocation and impoverishment resulting from the war and subsequent disturbances.

Certain basic principles in its policy make it especially adapted to the need for technical services in implementing the United Nations or national programs growing out of President Truman's suggestions popularly known as the Point IV proposals. Those principles include the following:

The core of its philosophy is to work with, not for, the people in the countries where it is operating. The approach is one of mutual respect and understanding, not of superiority. It includes appreciation of national cultures and customs and respect for national dignity and sensibilities.

No project is undertaken without participation of the government or other agencies of the country concerned and assurance that it reconciles fully with the national program. This is secured before any project is determined upon by full and frank discussion of the problem to be approached, the methods to be used and the ends sought. That the people respond to such a partnership is shown by the fact that the countries where Near East Foundation operates have contributed more than the Foundation to the financial support of the work. Every

dollar contributed by the American people is multiplied many times.

From the beginning, the Foundation has planned the projects as demonstrations to be carried out as broadly as possible through organizations, institutions and agencies already on the field thus avoiding large overhead, duplication of effort, large investment in buildings and land. It sends out a group of carefully selected and thoroughly trained workers (not only of American nationality) who are capable of setting up and maintaining these demonstrations. On numberless occasions their resourcefulness and initiative have brought success out of seeming defeat. One of the assets of the Foundation has always been the professional calibre and character of its personnel.

On the field, the Foundation gives special attention to the training of national personnel, inspiring and enlisting local leadership. As soon as a demonstration is completed attention and resources are focused upon other unsolved problems. Each undertaking begins with a study of needs and opportunities. An outstanding need is selected as a basis of a proposed demonstration.

In cooperation with the leaders of the country, the project goes through an exploratory period during which methods are tested and those that prove to be the most practical are selected. Then comes the demonstration period to prove the practicability of the work, to inform the leaders of the country and arouse public interest and initiative. All this is logically followed by a period of integration at the end of which the project is transferred to national leadership.

While Near East Foundation is a permanent American organization, none of its undertakings ever remain permanently under American supervision. No project is considered sound which does not give promise of becoming a part of the life of the people and of drawing its vitality, leadership and financial support from the country concerned. This is a most highly multiplying process in international service.

The Foundation has undertaken more than two hundred projects in seven countries. These undertakings represent a wide range of practical and technical service in artificial insemination of livestock, agricultural education, rural health, rural home improvement, rehabilitation of war victims, social welfare, recreation and leadership training. Some of them require only a limited number of personnel and a short period of time. Others necessitate larger investments in money and workers and from two to six years of intensive effort before they are transferred fully to local responsibility. But more than one hundred and fifty of these projects have either been completed and require no further attention or are integrated with the programs of the countries themselves.

Examples given below are selected from the program in Greece.

Agricultural Education and Extension. — Experience before the war in a 50-village demonstration for awakening individual and community initiative has been incorporated in an official decree since the war providing for Near East Foundation supervision of farm improvement projects through Greek field workers specially trained in agricultural education and extension. Beginning with farm youths the work has enveloped the adult farmers in practical improvement of farming practices netting steady progress in production and quality. The original Greek field staff of twenty specialized in this work of demonstrational education has expanded to thirty men in ten nomoi or districts and involving 45,000 families. The Marshall Plan Economic Cooperation aid has entered this field of activity as the most effective method of permanent as well as immediate effect on the farm economy generally. The established extension service of the country is being slowly relieved of multiple administrative duties, growing out of refugee resettlement, land reallocation and subsidized crop programs, so that its men can be adjusted to this more productive approach with the idea that the regular extension service would eventually absorb the program. Men in the Ministry of Agriculture who have had both supervision experience with the Near East Foundation and specialized preparation in the United Sta-

tes are being given leadership looking toward nation-wide expansion of this program. Farm cooperatives are active in stimulation of local responsibility and financing.

Rural Home Improvement. — Growing out of village centers for education of farm women in food preservation, making of family clothing, care of children and family health demonstrated before the war, a more mobile plan in groups of villages with farm cooperative participation has just been launched in Grecian Macedonia. Wheat contributions by the members of the farm cooperatives are the principal source of the financing with other funds coming from ECA and the Ministry of Agriculture. Program supervision is under Near East Foundation but the planning is a joint effort looking toward the development of a pattern for the entire country. Here again the local leadership includes personnel who have had specialized training abroad. Training of personnel for similar areas will be a a feature of this work as at present in village centers near Athens.

Rural Sanitation and Water Supply. — Restoration of village water supply in more than 500 repatriated communities is under the supervision of the Foundation in cooperation with the Ministries of Health and Reconstruction with materials and work relief funds supplied from the ECA program. But the Foundation is more regularly interested in organizing community initiative for new water supply and home and school sanitation facilities for disease prevention. Such programs are used also by the National School of Hygiene for practice training of village doctors and sanitation inspectors.

*Livestock Improvement.** —

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* A note on 'Livestock Improvement in Greece' by John Halpin, Director of the Livestock Improvement Project, appears under the heading 'Animal Production' (Ed. note).

Rehabilitation of War Mine Victims. — There are perhaps more civilian farm than military victims of land mines in Greece; a farm wife gathering brush for her bread oven, a shepherd boy driving a stake for tethering his goat, a villager going along a road to market, or working in the field, farm children walking to school, all are under constant risk of exploding a mine. In addition, there are more than 16,000 military amputees. Near East Foundation led the way in rehabilitation service in this field with specialists from abroad in physical therapy, trade retraining and appliances to restore the disabled to livelihood. Under a new agreement signed by ECA and three ministries concerned, the Foundation is being charged with the implementation of a combined activity for military and civilian cases, having prepared Greek personnel for this purpose in England and the United States. It also organized a school of physical therapy for professional workers in 1946 with the National School of Hygiene.

Other Activities in Greece include supervision, through Greek personnel trained abroad, of work for refugee children under the Queen's Committee in the Northern Provinces, centers for working youths in the Capital area, a combined community recreation and training field for professional recreation workers in cooperation with the National Academy of Physical Education, aids to crippled, deaf and blind children.

As the governments of the Near and Middle East realize, and as the veteran American engineer, Max W. Thornburg, has emphasized in his new book on Turkey, the essential base for development under Point IV—or any other great economic plan— is the creation of new knowledge and wealth at the level of the people. Thornburg goes on to point out that unless buying power exists to bring about a rise of the standard of living — by a process similar to the activities described above — there is no purpose in building factories which cannot dispose of their production.

ITEMS OF INFORMATION

NUTRITION

Food composition tables prepared by FAO and their application

(Prepared by FAO Nutrition Division)

FAO's recently issued 'Food Composition Tables for International Use' have been prepared and issued to help member governments in calculating the calorie and nutrient value of available food supplies. These tables give the calorie, protein, fat and carbohydrate value of many basic foods, including most foods found in European markets. Since they provide so little information on the nutrient content of cooked and preserved foods, or food mixtures, they cannot satisfactorily be used directly for computing the composition of family diets. They may, however, supplement tables specially designed for this purpose. For example, some of the latter in current use may not provide data on some important foods such as fruits and vegetables which are included in the FAO tables.

In many European countries tables are available which have been drawn up for application to local foods. When this is so there is a natural and understandable reluctance to make use of new tables. Actually, national tables may be preferable for internal use provided they are based on numerous determinations of locally consumed foods, and are adapted periodically in accordance with qualitative changes occurring in national food supplies. Unfortunately, even the best national tables are not well suited for international work in this field, largely because they lack uniformity in the system used to compute calories and nutrients. It is in fact difficult to find any two sets of national tables which correspond as regards the techniques followed in their preparation, and in the terms employed.

The need for tables to furnish a basis for comparability has been known for a long time. During the war this need became acute and European tables were developed for UNRRA in 1944 by a Combined Working Party. These tables, entitled 'Nutrient Values of European Foodstuffs During the War', were reissued with revisions in 1945 and have been widely used and quoted. In some instances they have been used in dietary studies in order to obtain results that could be compared with findings in other countries. Like the FAO tables, they contain figures that are essentially 'compromises'; since the basic data emanating from more than one country were divergent, differences of this nature had to be resolved. Some of the differences were real, *i. e.* related to actual qualitative differences in the kind and form of the foods themselves. Others were only apparent. Analysis of identical foods in different countries may yield different results according to the system of analysis and computation followed. In the European tables the figures obtained by different systems were sometimes averaged and a specific system was not followed throughout the preparation of the tables.

The FAO tables are based on methods recommended in the report of an FAO Expert Committee convened in 1947, entitled 'Energy-Yielding Components of Food and Computation of Calorie Values'. They contain more items than most tables in current use in European countries, partly because they include foods consumed in other parts of the world. This allows a greater choice in selecting the appropriate figures corresponding to a particular kind and form of food. However, care is required in choosing the most suitable figures. It should be added that many of the figures in the FAO tables are approximately similar to figures given in the tables of the Combined Working Party and to those in other European tables.

Another advantage of the FAO tables is that they facilitate comparisons of the contribution which particular foods may make to the diet. The terms used in reporting content of the various nutrients are similar throughout, as is the system of computing calorie values. The latter is based on the concept of 'physiological fuel value', with appropriate allowances for losses in digestion, the allowances being estimated from the results of laboratory experiments on human beings to the greatest extent possible. In the FAO system, greater deductions for losses in digestion are made in the case of certain foods than

has been usual in preparing other food composition tables. This can be seen by comparing the figures for whole wheats and white flours obtained by the FAO method, and the conventional method involving the application of standard factors. These standard factors represent the calorie value of carbohydrate, fat and protein per gram as 4, 9 & 4 respectively. The latter system makes only general allowances for the factor of digestibility, and it applies best to diets such as those in the United States, where either system gives a good approximation.

	Calories per 100 *grams*			
	Item No.	Conventional (4-9-4)	FAO	Differences
Whole wheat 100% *extraction :*	No.			
Soft	7	355	333	— 22
Medium	1	357	334	— 23
Hard.	4	354	332	— 22
White flour 72% *extraction :*				
Soft	9	356	365	+ 9
Medium	3	355	364*	+ 9
Hard.	6	355	364	+ 9

* The calorie value for this flour is erroneously given in the FAO tables as 370.

One of the main objects of preparing the tables was their use in assessing the calorie and nutrient value of national food supplies by the food balance sheet technique. The problems arising in applying them for this purpose are, in general, no more complicated than those which attend the use of any tables offering a wide range of choice in the appropriate figures to be applied to a given food. Reorientation is, however, needed in changing from one set of tables to another, because the classification is not exactly the same in any two tables. Moreover, some of the terms used in describing certain foods in the FAO tables may be unfamiliar in some countries. One example is the classification of wheat into three main types, with two sets of figures for the flours derived from each type. This is based on the protein content of the whole grain (expressed as N × 5.83) on a water-free basis. To apply these figures correctly in any country it is necessary to know the protein content of domestic and imported wheats and the prevailing rates of extraction. Such knowledge will be available to experts in most European countries. There may be some countries in which domestic wheat is 'soft' with a given extraction rate, whereas imported wheat may be 'medium' or 'hard' with a different extraction rate. In this case the best method would be to separate the two main types and make independent calculations using the appropriate item in the tables for each type.

Another comparatively simple adaptation may be needed in respect of wheat if the usual moisture content is known to be different from that given in the FAO tables (12 percent). For example, 100 tons of wheat with a moisture content of 14 percent (86 percent solids) are equivalent to $\frac{86}{88} \times 100$ (or 97.7 tons) at a 12 percent moisture content (88 percent solids). It is simpler for the user of the tables to make this adjustment directly than to include figures adjusted for moisture content in the tables themselves. The important point is to know the average moisture content of the wheat at the stage at which statistical estimates are made, *e. g.* the tonnage of domestic wheat in the elevators or mills, and of imported wheat as brought into the country. The conventional method of assuming that wheat has a moisture content of 15 percent, which is sometimes followed, is sound only when (*a*) the atmosphere is sufficiently humid to keep the moisture content at approximately this level, or (*b*) the statistical data relate to grain which has been tempered (moistened) to this degree in preparation for milling. The 12 percent moisture figure given in the FAO tables may be too low in some countries and too high in others. It was chosen as an average suitable for use in the absence of more precise information.

A similar and usually more difficult question arises in selecting the most suitable figures in the tables for calculating the calorie and nutrient value of the meats of domestic animals. This depends on (*a*) the relative fatness of the animals ; (*b*)whether the carcass weights include the head ; and (*c*) the amount of fat removed at the slaughterhouse. Some difficulty may, for example,be experienced in deciding whether, in terms of the FAO classification, pork is thin, medium or fat, or in a state which does not correspond exactly with any of these classifications. Fortunately, the data on meats in most European countries correspond reasonably well and are also in good agreement with those in other areas when they refer to the same type of carcass and similar degrees of fatness. The variations in fat content, however, are wide and are reflected in differences in protein content as well as in calorie value.

Experts on livestocks and meats in a particular country are usually able to indicate which of the figures correspond most closely with the dominant type in the country's supply. The average weight of domestic animals at the time of slaughter is one criterion that may be used in deciding on the most appropriate figures to use. The weights as shown in the tables are, however, not adequate in themselves; they may be misleading if most of the meat is produced from very large or very small breeds. Other criteria, such as direct analyses of characteristic kinds of local meats are available in some European countries and such data are particularly valuable. In the absence of national figures on the

composition of average (wholesale) meats, some other guide may be needed to determine which item, or combination of items, is the most appropriate. The help of experts should be obtained in order to ensure that the conclusions are as nearly correct as possible.

Processed foods of various kinds present another problem. The FAO tables do not provide figures for some important processed foods, so that in using them it is necessary to compute the equivalent fresh weight of some items. The great variety of preserved forms of meat, fish, fruits and vegetables, made it impossible to supply appropriate figures except for a few of the most important kinds.

In the case of processed fish, the tables provide few values for canned fish, but a wide choice of figures for salted and dried fish of various kinds. The range of choice in this case may be too great, if anything, rather than too small. Not all the types of processed fish covered in the tables are of importance in Europe, but a fair number of them are. The wide range of values for protein content in the different types indicates the need for carefully determining the types used in the greatest quantities in order to avoid serious errors in estimating the protein obtained from fish.

Again, the kinds of cheeses listed in the table show a considerable variation in composition and it may not be easy to select the forms consumed in the largest amounts. Fat content as well as protein content varies widely ; there is a tenfold range in fat and a fivefold range in protein. Milk solids as contained in cheeses are of high nutritive value. It is therefore advisable to classify the various cheeses consumed in a country and apply the appropriate values to each, rather than to select a single figure in the tables and apply this to the whole national supply.

Finally, the main limitation of the FAO tables is the absence of data on mineral and vitamin content. The presentation of tables covering these nutrients is a most formidable task. To carry it out satisfactorily, the collaboration of experts in many countries will be needed. Through such collaboration the Nutrition Division has already been supplied with valuable basic information, but more help will be needed in this field. Even the preliminary publication of bibliographies covering various aspects of the subject would call for additional assistance, because much of the relevant scientific literature and particularly unpublished work of importance cannot easily be collated by the headquarter's staff of FAO alone.

In spite of these difficulties, it is hoped to extend the tables to cover a number of other nutrients within a reasonable period of time. In general, the present tables have been found to be of considerable value both in the work of FAO itself and to workers in member countries, and the Nutrition Division has been encouraged to extend its activities in this field along the lines indicated.

AGRICULTURE

Land Reform in Italy

(*Statement made at the Press Conference held in Rome on 23 March 1950 by Mr* A. SEGNI, *Italian Minister of Agriculture*)

Land reform in Italy — a social agricultural problem which must be solved — is being carried out in accordance with the dispositions of the Constitution.

The geographical distribution of landed property in Italy indicates that the land is broken up into very small units, although in some zones there are still many large estates, usually less productive and socially more backward.

Statistics on the distribution of property according to category of taxable income give a clear idea of the degree of ' economic ' concentration of property : 94.6 per cent. of the proprietors have a taxable income of less than 2,000 lire, equivalent to 32.5 per cent. of the total taxable income ; holdings producing over 10 thousand lire are reported as 1 per cent. in number, (41.9 per cent. of the total taxable income) ; estates where the taxable income amounts to over 100 thousand lire form 0.04 per cent. of the total (10.1 per cent. of the total taxable income).

These figures show the wide disparity of land ownership conditions — on the one hand, fragmentation or excessive division of landed property and, on the other, concentration of a high percentage of the land and taxable income among a few thousand families which thus obtain a considerable part of the total scanty returns from the land.

Land reform should not be merely a process of subdividing the land among the peasants. This was the main objective of the reforms carried out after the first and the second world wars in many states of Central Europe. The results at first were not always successful and the smallholding only became stabilized after a difficult period of adjustment. In Italy, however, it is a question of applying a measure which will take into account the specific characteristics of Italian agriculture and which will obtain results from both the social aspect and production, avoiding a period of crisis and difficult adaptation on the part of the peasant classes.

* * *

The Italian bill takes into consideration the present development of Italian agriculture and provides for its rapid acceleration along natural lines.

Italian landed property has undergone a rapid process of subdivision. The number of holdings registered at the beginning of the century was 4

and a half million, while today it is close to 12 million. This signifies that the average size of the Italian holding has been reduced by almost two-thirds in fifty years.

It is also interesting to note the changes which have taken place in the peasant categories.

Peasant holdings at the beginning of the century numbered 2,100 thousand, while today there are nearly 3,500 thousand.

* * *

An expropriation schedule has been drawn up to provide the rules to be followed in expropriating land. This schedule, however, has not always been accurately interpreted.

It is to be noted that the extent of expropriation is determined primarily by the economic value of each holding. This is an application of the social principles sanctioned by the Constitution. Many criticisms of the project made recently have not taken this basic fact into account.

The extent of expropriation, however, increases in ratio to the greater size of the holding ; consequently, a holding which has the same taxable income as another, but is larger than this other holding, will be required to surrender a much larger proportion of land.

The expropriation schedule effectively combines these two criteria.

* * *

From the standpoint of production, the Reform rests primarily on the fact that in practically every Italian district the maximum output is obtained on the small holding.

The Reform permits the maximum utilization of manpower and also the process known as the capitalization of labour, whereby the manpower in excess of the normal farm requirements is transferred into fresh capital which becomes a permanent investment in the land.

It ought also to be recalled that the small peasant holding is predominant throughout Europe. Although Italy has many smallholdings, except for Spain, it has the lowest percentage of all the European nations (where the smallholding generally forms 85-95 per cent. of the farms). European agriculture has already solved the problem of higher farm production by depending to the maximum on the peasant holding.

Another aspect of the Reform, also as regards production, is that it brings about an investment of a considerable amount of capital particularly in the under-developed areas of the south, and thus creates a heavy demand for industrial products which will be utilized for the land (farm machinery, fertilizers, tools, farm buildings, etc.).

It is to be noted that only a small part of the available funds is allocated for the payment of expropriated land. The greater part will be assigned for land improvement and the supply of equipment to the new holdings which will be established, while the obligation to carry out improvements in the holdings not affected by the Reform will make for rapid progress.

A marked trend of opinion, also authoritatively supported, was that land improvement should precede the Reform ; only after improvements had been made would the land be divided among the peasants, if this operation had not already taken place spontaneously as a result of land improvement. We are definitely against this opinion also because of past experience. Land improvement and reclamation have not by any means produced the social results which some expected, but have served merely to benefit certain classes of proprietors or, in some areas, to bring about social results contrary to those which are anticipated today.

We definitely consider that the Reform should precede land improvement. This is not to say that the latter is to be disregarded — the projects drawn up indicate that land improvement will be closely linked with the work of land reform.

* * *

For the purposes of the Reform, Italian territory will be divided into three zones where different criteria will be followed. Zone A comprises the Lombardy dairy-farm area. Here the smallholding could be developed but not for large numbers. Improvement operations will be as important as the reform measures. The estates liable to be expropriated, however, present a taxable income of over 200 thousand lire.

Some would like the treatment adopted for the Lombardy dairy-farms to be also applied to other types of farms, for example, to the farms under steward management of Central Italy. We do not agree to this suggestion as the farms of Central Italy are far from being so centrally organized as the Lombardy farms, and the subdivision into holdings already brings about the basis for family settlement.

Moreover, these steward-managed farms only occupy a small part of the territory as in the greater part the economic unit is the holding and the estates are merely administrative combinations of several holdings.

Zone B covers extensive areas in the south, the centre and also in the Po Delta zone. These are the areas where the land reform associations are operating and where land improvement operations in connection with land reform will be more intensive. They are also areas where reform measures will be started before the law comes into force owing to the serious economic and social conditions there.

The inclusion of the Po Delta territory has been criticized. It has been pointed out that it is not a question of extensive areas since the number of single holdings is high.. We can state, however, that in this zone the large estate not long improved

predominates and that the labour is mainly paid labour with all the serious social consequences.

Zone C includes all the other territories.

The following data indicate the economic and social results of the Reform :

(1) Number of proprietors liable to expropriation : approximately 8,000
5,000 with an income from 30 to 100 thousand lire
3,000 with an income over 100 thousand lire

(2) Number of hectares expected to be obtained :
Private individuals 1,260,000 ha.
Associations 150,000 »

(3) The increase in employment has been estimated at 90-100 million work-days per year.

Meeting of Experts on Hybrid Maize

(*Extract from a document submitted to the 2nd Meeting of the European Committee on Agricultural Technology, Geneva 27-30 March*).

The Hybrid Maize Meeting organized by FAO at Bergamo 1948, initiated a coordinated programme of trials among all European countries interested in this work. During normal prewar years, Europe had a yearly consumption of about 26 million tons of grain maize of which it produced only about 70 % itself. About 30 % had to be imported, mostly from overseas. Hence, the importance of Hybrid Maize development in Europe promoted by FAO is obvious. Following FAO's initiative, OEEC developed plans in 1949 to import hybrid maize seed on a large scale among its member countries. Various countries proposed that the working party already established by FAO among the interested member or non-member countries should become a special Association for the development of maize improvement ; others considered such an association unnecessary.

The Hybrid Maize Meeting, Rome 30 January-3 February 1950, was convened by FAO in order to discuss :

(1) the results of the hybrid maize trials in 1949 and the programme of cooperative research for 1950,

(2) the establishment of an Association for maize improvement in Europe and in the Near East.

1. The Meeting approved the work that had been accomplished up to now on testing American hybrids in Europe and the Near East and expressed the opinion that the time had come to decide upon some more definite plan for cooperation in future work.

The Meeting suggested further that FAO immediately undertake the preparation of a Catalogue of Breeding Stocks of Maize within the framework of the FAO World Catalogue of Genetic Stocks.

With the object of obtaining information on the biological characteristics and vegetative behaviour of the maize plant under the varied climatic conditions of Europe, the Meeting emphasized the desirability of undertaking common phenological observations in a number of different countries on such characters as emergence, tasseling and maturity, on a number of hybrids representing an extensive range of maturity ratings, and agreed that it would not be feasible to designate two or even three varieties which could be tested in all localities, but that the most practicable course would be to select a total of six representative hybrids from which each country might be asked to select a group of say four for inclusion in its trials. In this way a certain common basis of comparison throughout the range of countries would be achieved.

The Meeting agreed that the following six varieties constituted a suitable group :

Hybrid	Maturity Rating
Wisconsin 240	80 – 85
» 355	90 – 95
» 464	100 – 105
» 641 AA	110 – 115
Indiana 416 B	120 – 125
U.S. 13	130 – 135

The Meeting recommended that FAO be asked to make material of these 6 varieties available for distribution on request. Those countries that had not already submitted their seed requirements to FAO for the 1950 planting were asked to do so in order that shipment might be arranged from Washington in time for the planting season.

2. Regarding the establishment of the Association for Maize Improvement in Europe and the Near East the Meeting considered that the arrangements made by FAO in the past had been satisfactory and recommended that if it was possible for FAO to continue its hybrid maize programme on similar lines in the future there would be no special need for a separate organization. The Meeting recommended that the FAO hybrid maize programme for Europe and the Near East be continued and that non-member countries wishing to participate should be invited to attend the meeting, and should receive all documentation and material if desired.

The Meeting further discussed the use of advanced generations of hybrids for forage and silage. Experiments in France have shown that the F_2 populations were superior to their parental hybrids in forage production and in dry matter content. After discussion of the possibilities of cooperative research on the subject, the Meeting agreed that work with advanced generation hybrids and synthetic varieties was not yet sufficiently advanced in Europe for it to be possible to define such cooperation at present. However it considered that investigations on this problem were important particularly for forage production and that they should be continued in the hope that more concrete proposals for a cooperative approach could be elaborated at the next meeting.

It was agreed that the next Hybrid Maize meeting should be held at the beginning of February 1951. An invitation was proferred by the delegate from France to hold the meeting in France.

* * *

At the meeting of the Committee on Agricultural Technology in Geneva, the Committee noted with satisfaction the continued cooperation of countries participating in the FAO European Hybrid Maize Trials and their deliberations at the Hybrid Maize Meeting convened by FAO in Rome.

The Committee approved the proposal to hold the next European Hybrid Maize Meeting in February 1951 *

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* Extract from the Final Report of the Second Meeting of the European Committee on Agricultural Technology, Geneva, 27-30 March 1950.

ANIMAL PRODUCTION

Solving problems of quarantine

How Britain ensures that all livestock sent abroad is free from disease and parasites.

by GEORGE LANGSTON

While the demand for Britain's pedigree bloodstock has grown appreciably since World War II, the shipment of animals abroad has been hampered to some extent by the extremely strict quarantine regulations which certain importing countries enforce. To take one example, one South American territory requires animals to be landed first in Canada or North America. After a considerable period in quarantine they are then flown to their destination. This, of course, adds greatly to the cost of transport.

The cause of these severe regulations is fear of animal diseases such as tuberculosis and foot and mouth disease. Britain fully sympathizes with these fears and has taken every possible step to remove the grounds for them. Her Livestock Export Group, representing the breeders, however, is now trying to persuade importing countries that excessive precautions against disease are no longer necessary, for Britain's own home precautions against 'foot and mouth' troubles are most stringent and in the post-war period there has been a vigorous drive to spread the system of attested herds and so deal with tuberculosis.

Importing countries demand certificates of health issued by veterinary surgeons in Britain ; certificates issued by Britain's Ministry of Agriculture guaranteeing the freedom of the country, or specified parts of it, from notifiable diseases ; and, in the case of some countries, quarantining of the animals in Britain for a fortnight or three weeks immediately before export.

Export Quarantine Stations.

All these points are understood and thoroughly complied with in the United Kingdom. Britain's Ministry of Agriculture has three export quarantine stations, at Tilbury, Liverpool and Glasgow, each of which is in the charge of a whole-time veterinary inspector. A new quarantine station is being built at the Royal Albert Dock, London. The animals are inspected by veterinary inspectors before they are taken to these stations and strict measures are enforced to ensure they are not exposed to any subsequent infection.

Importing countries require animals to be free from external parasites, and for this purpose, dressings are applied to all animals as a routine measure in Britain's quarantine stations. They are also groomed daily, but in spite of this the dressings are apt to give their coats a dusty and ungroomed appearance — which, however, quickly disappears once the voyage is over.

The Livestock Export Group in Britain does all it can to remove misunderstandings on such points as these ; to emphasize the strict precautions taken and to satisfy importing countries that various stringent blood tests are no longer necessary. It takes the view that sea voyages themselves are periods of quarantine and that double quarantining both before and after a voyage is unnecessary.

Direct Shipment Now Accepted.

The Union of South Africa, in fact, has now agreed to accept livestock shipped direct without previous quarantining. Animals transported to Southern Rhodesia, also, may no longer have to undergo quarantine in the United Kingdom, but on arrival in Africa will go straight to Salisbury for a single period of quarantine there.

Venezuela, which previously required animals to be landed in North America and transported overland after a considerable delay, recently agreed also to accept direct shipments. And Canada, which a short time ago was returning or slaughtering all incoming cattle which reacted to the Johnin test, has now consented to dispense with the test altogether.

Britain's Ministry of Agriculture does everything possible to help exporting breeders to comply with regulations laid down by overseas governments, and for their guidance issues summaries of these regulations at frequent intervals. And to attract more buyers it sent representatives recently to tour the agricultural and livestock fairs of Canada and the United States. In this way farmers overseas were given some idea of the pedigree animals which can be bought in Britain. Both the Ministry and the breeders realize that since samples cannot be sent

round, selling bloodstock at a distance is more difficult than selling other sorts of goods.

There is plenty of evidence that the pioneer work done 150 years ago by some of Britain's breeders and landowners will repay the effort with interest. Out of 20 breeds of cattle, sheep and horses which are famous throughout the world, all except three originated in the United Kingdom ; almost anyone can come to Britain today and find the type of stock he wants.

For the twelve months ended August, 1949, the export trade in horses was valued at £ 1,127,000, and many race-horses were sent overseas for breeding. Exports of animals also included 1,607 cattle, 839 sheep and 1,095 pigs, which were worth about £ 500,000 — or three times the pre-war average.

It is likely that the exports of livestock from Britain will be even higher in the near future as a result of efforts now being made to enable shippers to reduce freight charges ; and attempts are afoot to persuade some countries to reduce or abolish the *ad valorem* charge levied on bloodstock which is considered to be too high in proportion to the freight charges.

Improvement of indigenous supplies of feedstuffs

The problems and technology of animal feedstuffs in Europe were discussed at a meeting held by FAO at Zurich, Switzerland, 7-16 December 1949, under the chairmanship of Professor E. Crasemann (Switzerland). Representatives attended the meeting from Austria, Belgium, Denmark, Finland, France, Italy, Luxembourg, Netherlands, Switzerland, United Kingdom, and Yugoslavia, and observers were present from Bulgaria and Western Germany.

The current feedstuff situation in Europe was compared with that before the war. Of the total prewar feed supply, expressed in feed units, 93.5 percent was produced in Europe, and 6.5 percent was imported. Grains, grain offal, oilcakes, and other protein concentrates constituted the greater part of the imports. These imports were a small percentage of the total feed supply, but, because of their high value as feed, they largely determined the output of the European livestock industry.

Dependence on imports varied considerably from country to country. In certain countries like Belgium, Netherlands, Norway, and the United Kingdom, more than 60 percent of the concentrates were imported. In other countries, like France and Denmark, the structure of agriculture was such that indigenous production met the requirements to a greater extent. Still other countries, mainly in eastern Europe, were self-sufficient in concentrates and even exported substantial quantities.

Owing to the great reduction in the imports of some countries during the war, and the inability of others to import, the agricultural structure in most countries was altered considerably in order to increase production, mainly for human consumption but also for animal feeding. Since the war, Europe has had difficulty in securing adequate supplies of feed. For instance, in terms of feed units, the total feed supplies (excluding grazing and green fodder) fell in 1947/48 to 63 percent of the prewar supply. In 1948/49 the situation improved, but the availabilities of feed reached only 83 percent of the prewar level. Supplies of concentrates, including grain, oilcake meal, and grain offal showed an even larger percentage decline and only slightly exceeded one-half the quantities available in prewar years. Although higher supplies are supposed to become available this year, it is unlikely that European countries will soon regain the prewar supply position.

The current situation is this : Animal production must be expanded, if possible above the prewar level, because of increased population and because even in prewar years the total food supply was inadequate. But, on account of the world shortage of supplies and the necessity that European countries balance their trade accounts, especially with hard-currency countries, the required feedstuffs cannot be imported in sufficient quantities.

The discussion in the meeting had the following objectives : (*a*) to increase the indigenous production of feedstuffs in Europe (both on arable land and on grasslands) ; (*b*) to improve their quality ; (*c*) to bring about a better utilization of feedstuffs on farms through the introduction of modern methods of feeding and conservation ; and (*d*) to disseminate to farmers knowledge on the newest developments in animal feeding science.

In trying to define a general policy on animal feeding in Europe, it was recognized that there is a great variety of conditions in the individual countries. Measures that can be successfully applied in certain countries may be inappropriate in others, because of differences in the structure of agricultural production. Therefore, each country must define its own policy, adapted to prevailing conditions. However, certain general considerations are common to all countries.

More detailed information should be assembled on the availability of feeds in the various countries and the requirements of the livestock industry. Such information, stated on a comparable basis, would greatly assist European countries in defining future policies and programs. Standardization of measurement and of expressing the nutritional value of feedstuffs is necessary to obtain a clearer picture of the feed situation.

The application of new technical developments will enable the European livestock industry to rely more and more on indigenous feed supplies, and

will lead to a reduction in imports. However, some countries will always need to import a certain amount of concentrates and cereals. Only an increase in the production of concentrates within Europe and the development of a free flow of intra-European trade in grain and feedstuffs would relieve Europe as a whole of reliance on supplies from outside sources. It is unlikely that this can be achieved in the near future, particularly in the case of protein concentrates. A continuing need to import a certain amount of concentrates from outside Europe must be considered.

Since grassland is the greatest source of feedstuffs, considerable attention must be devoted to better management of grasslands for improved quality and increased production. Appropriate measures in this direction would produce more effective results than in any other field. Permanent grasslands should have better manuring and the grass produced should be better utilized. Rotational grazing is a very valuable practice, and it can be encouraged by the use of electric fences. The ley farming system has been introduced in many countries and has significantly increased the supply of home-grown feedstuffs. This type of farming also leads to a better-balanced farming system. On the other hand it may be advisable under certain circumstances to improve existing permanent grasslands rather than put them under the plough. Most European countries still need better seeds for forage crops. Solution of this problem may decide how far ley farming can be extended in the future. The opinion was expressed that FAO should co-ordinate the technical work and facilitate the exchange of seed samples among European countries.

The production of feedstuffs from arable land can also be notably increased. Several measures which give good results were mentioned, but their success varies with different environmental and economic conditions. In several countries the production of cereals has already reached such a high level that further intensification does not seem possible. In these countries especially, better results have been obtained by substituting secondary cereals, potatoes, topinambour (Jerusalem artichoke, *Helianthus tuberosus*), or root crops. This makes possible the production of a higher amount of feed units per hectare than cereals. The introduction of fodder beets with a high sugar content has proved successful in some places, and there was general agreement that the production of potatoes and root crops as feedstuffs should be increased.

Several European countries, however, have large possibilities of improving their grain production. This may be done by better seeds and better methods of production. Also, a change in the species of cereals cultivated may bring about an increase of feed units per hectare : in France, good results have been obtained by substituting barley for oats. The maize yield can be increased, especially in Southern Europe, by better methods of cultivation and by more extensive use of hybrids. The extended use of catch crops during the war resulted in a large amount of feedstuffs in several countries, enabling them to avoid reductions in livestock numbers. Such measures are now used in many countries as an effective means of providing additional feedstuffs from arable land.

Conservation of Fodder.

The meeting pointed out the great influence of conservation on the quality of feedstuffs. The different techniques employed in making hay, the artificial drying of grass, and the newest methods of producing silage were thoroughly discussed. It was decided that the traditional methods of haymaking can be considerably improved and that, in particular, the nutritive qualities are improved if grass is cut at an early stage. The Swedish method of drying hay on wires was cited as a good method. The use of salt to preserve hay in southern European countries was cited as an effective method, particularly if the hay is stored before it is completely dry.

Silos are used extensively throughout Europe. A large number were erected during the war, partially subsidized by the governments. However, owing to high building costs and the discontinuation of subsidies in many countries, fewer silos are being erected. In some countries pit and trench silos have proved an effective and relatively cheap means of preservation. The different methods of making silage were discussed, *e.g.* through the application of materials such as A.I.V. acid, formic acid, molasses, and crushed beets. Under certain circumstances it is also possible to make a good quality silage without the addition of any preservative.

Theoretically, the best method of conserving green fodder would appear to be artificial drying, especially when it is cut in an early stage of growth. The resulting product has a nutritive value between that of hay and that of protein-rich concentrates. It is valuable for feeding pigs and poultry, which require a high amount of proteins and vitamins, but its high fiber content limits the percentage that can be used in these rations.

A drawback to artificial drying is the large capital investment involved in building drying plants and cost of using them. Several governments, particularly during the war, encouraged the development of this process on a co-operative basis and granted subsidies which in many instances amounted to 50 percent of the contruction cost. At present, however, subsidies are no longer granted and only a few plants are being built.

Substitute Feedstuffs.

The meeting discussed the possibility of developing substitute feedstuffs with the use of such material as amides, straw, and wood. Research work

in this field was started in several countries during the war, and a number of substitutes were developed and put to use. After the war this practice was discontinued in most cases because, with present methods, it is not economical.

As regards amides, among which special attention has been given to the feeding of urea, the consensus of the meeting was that these feedstuffs have not proved satisfactory under European conditions. There was general agreement that further research is necessary on the practical application of this kind of substitute, particularly basic research on the influence of urea and other amides on the bacteria of the rumen.

Research has also been conducted on the use of feedstuffs which have been developed by the chemical treatment of wood and straw, and the results were discussed by the meeting. The general conclusion was that while such substitutes are of value during an emergency period, from an economic point of view they are not profitable in normal times. This conclusion was based on European conditions and referred to feeding cellulose and not to the production of feeding yeast. However, since research may open new possibilities, the continuation of such work is strongly recommended. If efforts to derive a substitute feed from wood or straw should prove successful, the high potential of energy in present supplies of these products could be most beneficial.

The production of yeast as a by-product of the cellulose industry seems to promise satisfactory results. By adopting recently developed methods, the production cost of this type of feed will be considerably lower, and it can compete with other protein feeds of similar nutritive value.

Better Utilization of Feedstuffs.

The meeting pointed out that only a fraction of the energy in digestible nutrients is transformed by animals into animal produce. It is of the greatest importance, therefore, to increase the percentage of transformation and produce a greater quality of animal products with the same feedstuffs — milk, meat, eggs, work, etc. It is also recognized that more energy value from the feedstuffs is transformed in milk than in meat or eggs. The meeting believed, therefore, that milk production should be encouraged rather than meat and egg production.

The meeting stressed the fact that high-yielding animals need less feedstuffs per unit of animal produce. Research has shown that there is a variation in the transformation capacity of animals, depending on the breed and individual animals of the same breed. Breeding policies should take into account the selection of breeding animals for better utilization of available feedstuffs.

Other individual characteristics of animals also have an important influence on their feeding requirements. For instance, some cows have very high milk yields after calving, which soon drop to a considerably lower level. The lactation curve for other cows shows more constancy; the starting yields are not very high but are maintained longer at about the same level. Cows of the first group need a high amount of concentrates for the full exploitation of their milk capacity, but the requirements of the second group can be met with a smaller amount of concentrates.

In the feeding of dairy cows, the experience of various European countries shows that a relatively high milk yield can be obtained with roughage alone. However, if higher milk yields are to be reached, or if the production capacity of a cow is to be fully utilized, the administration of protein-rich concentrates is generally necessary. In some cases cows are given an additional ration of silage or root crops, but even this may be insufficient in order to utilize the full milking capacity of dairy cows; it is often necessary to add a certain amount of protein-rich concentrates such as oilcakes. The meeting believed that in order to get better feeding results with roughage, the roughage should be improved for greater palatability and feeding value of the dry matter. Further research should seek ways to make these improvements.

In several European countries research has been carried out to determine how far milk production can be stimulated by the use of certain hormones with normal feeds. This research, though still experimental, shows promising results and should be continued.

The practice of substituting other feeds for milk in the feeding of calves, in order to provide more milk for human consumption, has been a subject of research in many countries. There have been important developments in this field in several countries. Special milk substitutes in certain cases are fed with skim milk or whey. The meeting believed that the results so far obtained can be improved and considered that an international exchange of information on new methods of feeding and on the composition of substitute feedstuffs would be of great value.

Good results have been obtained in pig feeding by the partial replacement of cereals by cooked potatoes, but this involves a larger addition of protein concentrate. During the last few years fodder sugar beets have also been used to replace part of the cereals in the ration.

The meeting took an interest in the research work carried out in the United States of America on the so-called animal protein factor, especially with regard to pig and poultry feeding. Europe has had practically no experience in this field, but is expected to go forward with the utmost possible speed. The meeting suggested that FAO consider the possibility of keeping in touch with the technicians working on this research and from time to time review the results achieved.

Extension Work.

The meeting noted that the general aspects of agricultural extension work were discussed at a conference in The Hague (Netherlands), 4-11 August 1949, under the auspices of FAO. On that occasion certain general principles were agreed upon in regard to the organization of national extension services and their methods of work. It was believed that the same principles can also be applied in extending information to farmers on the most recent developments in production and utilization of animal feedstuffs.

However, in addition to these general aspects, the meeting considered it necessary to study the problems of each sector of agriculture on their own merits. For this reason a great deal of attention was paid to the particular requirements of an adequate extension service in the field of livestock feeding. The meeting deemed the following methods of extension the most important: (*a*) Organization of training courses during the winter for young farmers to deal specifically with problems relating to animal feeding; (*b*) including instruction on the newest developments in animal feeding in the curricula of agricultural schools; (*c*) selecting a number of pilot farms for educational purposes; (*d*) working out standard feed rations for the various types of animals; (*e*) creation of a system whereby farmers can have home-produced feedstuffs analysed by a central institute to ascertain their nutritional value; and (*f*) diffusion of knowledge on feeding practices through lectures, articles in agricultural periodicals, and the organization of demonstrations and excursions.

Recommendations.

Since the available information is insufficient on the feedstuffs position and existing feeding practices in European countries, additional information should be assembled on a comparable basis. The meeting therefore recommended that investigations be started on a uniform pattern for the purpose of obtaining the necessary details from all European countries. The meeting felt that FAO should undertake this task, in co-operation with other international organizations in Europe. This might be done by sending to the various countries a group of experts who are broadly familiar with European feedstuff problems and they could discuss the various aspects with the appropriate experts. The results thus obtained would be pooled and transmitted to governments through FAO. In the light of this information, governments could better consider their future policies and programs.

Discussions on technical aspects of feedstuff problems clearly indicated that further research is needed in many fields. The meeting felt that better and quicker results could be obtained in Europe through co-ordination of research work, to be arranged on a voluntary basis among the institutes concerned, through interchange of research programs, through organizing small meetings of scientists to deal with specific research problems, etc. The meeting therefore recommended that FAO get in touch with research institutes of the various countries through the respective governments, asking them to indicate the problems suitable for a co-operative research program.

The meeting was keenly interested in an exchange of information among European countries on technical developments in the production and utilization of feedstuffs, and recommended that FAO assist in this respect by publishing, perhaps in *Food and Agriculture, The FAO European Bulletin*, abstracts from important publications.

In view of the importance attached to the use of compound feedstuffs, and in order to prevent undesirable practices on the part of manufacturers, the meeting recommended that FAO collect information on legislative and other regulations in force in European countries relating to manufacture and trade in compound feeds, and the experience gained under such regulations. The complete data thus obtained should be made available to all European governments and, if necessary, serve as a basis for mutual consultation.

Artificial insemination

(*Extract from the final report of the meeting of experts to consider international regulations on artificial insemination in Europe - Rome, 7-10 February* 1950).

The European Committee on Agricultural Technology discussed at its first meeting (Rome, 26-30 September 1949) problems arising from the rapid development of Artificial Insemination in Europe and expressed the view that there is a need for international regulations on a European scale for the use of this method in breeding and for the preparation of a Convention regarding the shipment of semen between countries.

The European Committee on Agricultural Technology and several Governments having expressed their interest to study more closely the technical aspects of such regulations, FAO decided to convene a meeting of experts to consider (*a*) the extent to which national legislation can be made uniform — thus facilitating the movement of semen while at the same time giving ample guarantees of its breeding quality and freedom from infection, and (*b*) the feasibility of developing regulations which could be agreed upon by all those Governments in Europe which are interested in importing and exporting semen.

The meeting was held in Rome, 7-10 February 1950.

The following countries sent delegates to this meeting: Denmark, France, Italy, the Netherlands, Portugal, Turkey, United Kingdom. Observers were sent by Bulgaria, the German Federal Republic and Turkey. Observers representing the European

Confederation of Agriculture and the European Association on Animal Production also attended the meeting. M. H. Aersoe was elected Chairman.

After a general discussion in which all delegations expressed their views and during which also a statement received from the Swiss National FAO Committee (which had been unable to send a delegate to the meeting) was read and distributed, the meeting agreed to adopt the following agenda :

1. Form of the regulations
2. Characteristics of the breed
3. Characteristics of the sire (*a*) in regard to animal health (*b*) in regard to breeding.
4. Characteristics of the semen
5. Identification of the semen
6. Coloration of the semen
7. Packing
8. Means of transportation
9. Information which has to be given in the certificate accompanying the shipment of semen
10. Guarantees
11. Proposals concerning further steps in regard to the carrying out of the recommendations of this meeting
12. Other business.

At the closing session, the Meeting adopted the following document, asking FAO to transmit it to all European Governments and to present it at the next meeting of the European Committee on Agricultural Technology.

I. Generalities

The Meeting of Experts expressed the opinion that it is necessary to regulate strictly the sale of semen between countries on a European level .

It considered that the best means of achieving the envisaged objective would be to establish a Convention which would be accepted by all the European Governments concerned. In view of the pressing necessity of this problem, however, and recognizing that the application of such a Convention would entail a certain amount of time, the Meeting suggested that FAO submit the document adopted to the European Committee of Agricultural Technology and to the European Governments requesting that the necessary steps be taken. In particular, the Meeting suggested that the Governments contact the organizations intending to export or import semen, requesting them to apply the aforesaid principles.

In addition, the Meeting suggested that the Governments draw up a list of the legal entities or individuals which have given notice that they are prepared to comply with these principles, and that consequently they agree to be submitted to State supervision. This list should be submitted to FAO and communicated by FAO to all the European Governments and kept up-to-date.

The Meeting considered that during this transition period a certain uniformity in measures could be obtained, which later would facilitate the conclusion and application of a Convention on Artificial Insemination. The proposal submitted would not apply to the exchange of semen between scientific institutions belonging to the Government for the purpose of research and experiments.

The Meeting recommended that FAO, in 1953, institute an enquiry among the countries applying the rules established, with a view to studying amendments or additions which may have subsequently appeared necessary.

The Meeting was of the opinion that the regulations should cover all species of domestic animals. Considering, however, that at the present moment artificial insemination is chiefly employed in Europe for cattle, and recognizing that for other species there are special questions and problems which are not yet adequately defined, the Meeting suggested that for the time being regulations be limited to cattle, leaving the countries concerned free to propose at a later date, if found advisable, to extend to other classes of livestock, regulations on lines similar to those proposed for the international trade in cattle semen.

II. Draft regulations

1. Only legal entities or individuals who have obtained a special State licence for export shall be authorized to export semen. The granting of this licence entails the obligation to submit to supervision by the competent State authorities.

2. All exporters of semen will be required to keep a register recording data concerning the collection of the semen : date and hour, the quantity of semen collected, the density of spermatozoa at the collection, the quantity exported and the name and address of the recipient.

The register identification number will also have to be noted on the certificate, on the tube and on the package.

3. All consignments of semen should be accompanied by a certificate.

If several tubes are included in one consignment, each tube should be accompanied by an individual certificate.

4. In general it is considered that the semen of sires used for natural mating should not be made available for export. However, it will be necessary to indicate on the certificate accompanying the semen, if the sire were employed for natural mating or not. In the event of the bull having been employed for natural mating, the date when he was last used for this purpose should be stated.

5. A bull from which the semen is intended for export should undergo a very careful examination of the genitals to ensure that he has no defect or anomaly which might affect his fertility or that of his offspring.

6. The bulls from which the semen is to be exported should be free from tuberculosis, brucellosis and trichomoniasis and as far as can be ascertained

from all venereal and infectious diseases at the time of collection.

7. The bulls whose semen is exported should belong to a well-established breed ; thus semen from non-pedigree or cross-breeds would be excluded from export. The name of the breed should be clearly indicated, giving not only the breed but also the type to which the animal belongs and the country in which it was born :

It is therefore considered necessary :

1. to allow only the export of semen of a bull registered in a recognized herd-book and registered on the basis of its pedigree (that is having its sire and dam entered in the herd-book) ;

2. to indicate clearly in the certificate the full name of the herd-book in which the bull was originally registered and the country where this herd-book is kept. If the parents are not registered in the same herd-book as the bull himself, information will have to be supplied indicating the herd-book in which the parents are registered.

8. The following particulars relative to the ancestry should be noted in the certificate :

1. number of preceding generations registered in the herd-book ;

2. name and yields of sires and dams and grand-sires and grand-dams.

For dairy breeds or breeds with predominant milking aptitudes, the milk and butterfat yields should be noted according to the methods established for the standardization of milk-butterfat recording in Europe. In particular, the total milk and butterfat produced during the whole life of the animal should be mentioned.

For beef breeds, the results of performance tests should be given, if they have taken place, and the number of points obtained by the bull, its sire and dam and its grand-sire and grand-dam, at the time of examination by the Association of the Herd-book in which they are registered, as well as all the prizes obtained by the animals at shows.

9. It would be desirable to export semen only from sires with approved progeny. However, at the moment, this seems too difficult in practice. Consequently, the following measures have to be applied :

(*a*) the semen of bulls which are not licensed for service in the country in which they are located should not be exported ;

(*b*) the certificate accompanying the consignment of semen must give particulars of :

(*i*) the licence and type of licence authorizing the bull to be used for artificial insemination ;

(*ii*) the results of progeny tests with regard to the bull supplying the semen, if these have been made ;

(*iii*) the results of tests on the progeny of the sire of the bull supplying the semen, if these have been made.

10. Indication of the conformation must be given in the certificate by points either to be found in the herd-book or obtained at shows, and should these data not be available, by a photograph of the animal.

11. Pending international standardization of the methods for determining the fertility of a bull, the standard now applied could be indicated on the certificate accompanying the semen, on condition that particulars are given as to the manner in which these values are estimated.

12. To define the quality of the semen, the following particulars must be given in the certificate accompanying the consignments :

(*i*) Date and hour of collection,

(*ii*) Density of semen at collection,

(*iii*) Dilutor employed,

(*iv*) Percentage of dilution,

(*v*) Other substances added to the semen and the quantity thereof.

13. Pending further research permitting the improvement of a standard package the exporter should indicate the length of time for which he guarantees that the temperature of the semen will not exceed a given degree under normal conditions.

III. Recommendations

A. The Meeting of Experts recommended that FAO contact the International Office of Epizootics and convene a special meeting to study the tests which have to be carried out to ensure that the bulls which furnish semen are free from tuberculosis, brucellosis and trichomoniasis as well as from all other venereal and infectious diseases.

B. The Meeting stressed the danger to livestock breeding which might be present owing to the existence of lethal and semi-lethal factors and inasmuch as these dangers may be accentuated by the rapid increase of artificial insemination it was recommended that :

(1) extensive research be carried out to discover the existence of these factors, and that

(2) animals presumed to have these factors should be excluded from breeding.

C. The Meeting considered it to be important that the fertility of the bulls be indicated. Recognizing that the methods of calculation of the fertility index vary from country to country, it expresseed the desire that the methods of calculation be standardized on an international level. The meeting, therefore, asked FAO to contact the European Association for Animal Production and the Standing Commission for the Physiology and the Pathology of Reproduction to establish a standard method of calculation.

D. With a view to facilitating the identification of the semen, the Meeting recommended the establishment of an international standard for the coloration of the semen employing the same colour in the same breeds. It requested FAO to contact the European Association of Animal Production and the Standing Commission for the Physiology and Pathology of

Reproduction in regard to the establishment of such a standard.

E. Recognizing that further research may lead to improvement of the methods at present used in packing semen and make them less expensive, the meeting suggested that:

1. coordinated research be made in the different countries to this end;

2. the information obtained be exchanged through the intermediary of FAO.

It is hoped that by these means standardization of packing methods may be reached.

F. The Meeting recommended that the Governments make every effort to facilitate the transport of semen to ensure the greatest possible speed of delivery. To this end, it recommended that the requisite measures be studied in order that semen consignments may be handled as highly perishable goods. It also recommended that every possible effort be made to avoid delays which might occur at the customs, and to draw up special terms for the handling of semen consignments abroad.

* * *

In its Final Report the European Committee on Agricultural Technology, meeting in Geneva, 27-30 March 1950, expressed appreciation of FAO's work in this field. The final report of the meeting of experts who considered international regulations on artificial insemination in Europe, held in Rome from 7-10 February 1950 was commended, and the principles in the draft regulations contained therein for an international regulation of the trade of semen were unanimously accepted. They were considered a suitable basis for working out an international convention on this matter.

The Committee recommended that FAO:

a. investigate the possibility of negotiating a convention as a matter of urgency on the basis of the above-mentioned draft regulations;

b. induce the governments to incorporate in their national legislations the regulations embodied in the proposed draft, even before a convention is concluded.

c. carry out the recommendations contained in the above-mentioned final report.

Livestock Improvement Program in Greece

The Livestock Improvement Program has been carried on in Greece for four years. The original plans for this project, however, go back to early in 1943, when the agricultural advisers of the Near East Foundation decided that an artificial insemination program would be a worthwhile measure to help rehabilitate agriculture in Greece.

Two American specialists were brought to Greece in the spring of 1945 and immediate measures were taken to get the program into operation. The necessary technical equipment was imported from the United States. Six top-quality Brown Swiss bulls were imported from the United States and a bull stud and semen-processing laboratory was set up at the Superior School of Agriculture at Athens. The Ministry of Agriculture was asked to cooperate with the program and they took every measure to facilitate the beginning of the program. Men were assigned to the project, both veterinarians and agriculturists, and they were trained in the technique of insemination. The first cow was inseminated August 23, 1945.

A second bull stud was needed to serve Northern Greece, which could not be reached by regular transportation means at that time. Therefore, a second station was established at Salonica in Northern Greece. Cows were first bred from this station in May of 1946. The program has continued to grow and expand since it was first inaugurated. Today 6,824 farmers, who own 22,761 cows, are being reached by the program. A total of 28,439 cows had been bred by July 1, 1949. An estimated number of 18,321 calves have been born to date, with an average conception rate on all services of 60 %.

Because of the lack of adequate public transport, it is necessary that all of the inseminators work from the two centres. They travel by jeep and call at each village on their route every day. A total of eight hundred miles is travelled daily on the nine insemination routes that are now in operation. Ninety-one villages are having the service made available to them. The farmers pay the equivalent of $ 0.50 for each service in the area of Northern Greece. The farmers in the vicinity of Athens, because of a better fluid milk market, are able to pay the equivalent of $ 1.50 for each first service. This money is used to pay the wages of the inseminators and cover part of the transportation expense. The work in Northern Greece is seasonal. A peak is reached during the month of July, when last year over 1700 cows were bred on the six insemination routes. In December about 200 cows were bred during the lowest month, when three routes are in operation. Approximately 700 cows are bred in the vicinity of Athens each month on three insemination routes.

Final plans are now being drawn up so that the government may take over the program completely with the Near East Foundation remaining in an advisory capacity. It is intended that the government will operate the stations and the farmers' cooperatives will operate the insemination routes. It will be necessary for the program to be subsidized during the next two or three years by the ECA Mission. This Mission, as well as its predecessor, the American Mission for Aid to Greece,

has cooperated with the Ministry of Agriculture and the Near East Foundation to enable the Livestock Improvement Project to function continuously since its inception.

An extension program to promote better dairy practices is being carried on in conjunction with the artificial insemination program. The farmers are being shown by demonstrations the value of growing and feeding legumes. Better feeding is of great importance in Greece, where the land area for growing roughage and concentrates for animal feeding is limited. The farmers are beginning to realize that it is better to keep and feed one good cow rather than three poor ones. They are getting these good cows by crossing their native cattle with the Brown Swiss bulls in this artificial insemination program.

Foot - and - mouth disease meeting

A worldwide meeting on foot - and - mouth disease will be held jointly by FAO and the International Office of Epizootics 15 to 20 May in Paris.

Foot - and - mouth disease is caused by a virus of which there are various strains. After an attack of the disease an animal becomes immune, but only to the particular strain which caused the attack. Similarly, vaccines will protect an animal only against the particular strain of the disease from which the vaccine is manufactured. It has been generally felt that one of the essential problems in the control of the disease is the identification of these virus strains.

FAO hopes, therefore, that at the Paris meeting delegates of governments having suitable laboratories will be authorized to offer them for international use in ' typing ' virus strains. It is also hoped that delegates of governments not having such laboratory facilities will be prepared to state the needs of their governments to have virus strains ' typed ' elsewhere.

The agenda for the meeting allows time for consideration of international cooperation in the identification of virus strains and also of the availability of training facilities. There will be a general discussion on methods of vaccine production, methods of vaccination, and possible ways of coordinating disease reporting systems between countries. The overall object of the meeting is to make available to all countries the latest developments on the control of this disease.

Since the meeting will be attended by a large group of veterinarians, it is expected to provide an opportunity for discussing technical assistance requirements in the veterinary field related to the proposed Program of Technical Assistance for Economic Development to be carried out by United Nations and the Specialized Agencies.

The meeting on foot - and - mouth disease will follow immediately on the annual meeting of the International Office of Epizootics. Cooperative sponsorship of the foot - and - mouth disease meeting was agreed upon at the recent Fifth Session of the Conference of FAO.

Invitations have been issued to each of the 63 member nations of FAO as well as to countries which are members of the International Office of Epizootics but do not belong to FAO. Countries not members of either organization have been invited to send observers.

MILK

The milk conservation project of the UN Children's Fund

Conservation of milk is becoming one of the most pressing needs of the world's food program. As a result its importance in the feeding of underprivileged children gives it a top priority in the plans carried out by the United Nations International Children's Emergency Fund.

While readily and safely available in the United States and in a few Western European countries, it is still unsafe in many civilized localities and often beyond the price of the poor.

In many parts of Europe it is available only when roads exist or when the weather conditions do not interfere with transportation. The availability of milk is further restricted by want of pastures where cattle may be properly fed and by the severe losses inflicted by the last war on European herds.

To overcome these factors UNICEF is carrying out an extentive plan to pasteurize or dry as much fresh milk as is available in several countries of Europe. The idea is to establish reserves of milk powder in several strategic stations, mainly in urban centers, so that it may be evenly distributed to children and pregnant mothers all the year around, and become a guarantee against the ever-changing availability of local fresh milk.

This problem was examined with full attention by the Executive Board of UNICEF who voted a credit of $ 2,000,000 on August 1948 to encourage the production and distribution of safe milk by providing beneficiary countries with processing machinery. One of the most important of the many difficulties post-war governments had to face in the greatest part of Europe, was the lack of dairy supplying industries developed to sufficient capacity.

Later on the Board agreed to supplement its first allocation up to a total $ 3,810,000, which came from unprogrammed balances or other available funds.

This important decision grew from a general milk survey made by a group of dairy experts representing the Children's Fund and the United Nations Food and Agricultural Organization.

Country (1)	Present program (2)	Funds available (3)	Program (4) Item	Status (5)
Austria	Assistance to twelve fluid milk plants	$ 135,000	11 separators	Br.
			3 add. pasteurizers	Ba.
			6 can washers	Ba.
			4 refrig. equipment	Ba.
			2 scales	Ba.
			2 bowls for separation	
			4 pasteurizers	Sip.
			1 bottling chain	Ba.
Czechoslovakia	3 dry milk plants	$ 375,000	2 drying units	P.
			1 drying unit	Br.
			3 powder filling eqnipment	Br.
			3 sifters	Br.
Finland	26 cooling installations	$ 95,000	28 cooling plants	Br.
France	Fluid milk equipment	$ 700,000	4 bottling chains	P.
			Other items under discussion	
Greece	2 pasteurization plants	$ 100,000	Various equipmeut	Sip.
	(*a*) Salonika			
	(*b*) Volos			
Italy	Training equipment	$ 450,000	milk receiving dept., pasteurizing, filling & bottling dept.	Br.
	Additional facilities to pasteurization centre (Rome) 2 past. centres		1 pasteurizer	Sip.
			1 bottle washer	Sip.
	(*a*) Turin		various equipment	Ba.
	(*b*) Palermo			
Poland.	1. 5 dry milk plants	$ 1,025,000	5 dry milk units	P.
			5 powder filling equipment	Br.
			5 sifters	Ba.
	2. Bottling, washing, filling & capping eqpt. for Warsaw		2 bottling chains	Ba.
	3. Veterinary equipment		various equipment	P.
	4. Various equipt. for treatment of fluid milk		2 boilers	P.
			28 separators	Br.
			24 tanks	Br.
			4 pasteurizers	Ba.
			1 bottling chain	Ba.
			50 refrig. & cooling equipment	Ba.
			milk pipes	Ba.
			20 pasteurizers	Sip.
Yugoslavia	dry milk plants incl. fluid milk eqpt.	$ 800,000	2 dry units	P.
			powder filling eqpt.	
	various eqpt. for treatment of fluid milk		sifters	
			3 separators (for Coll. centres)	Br.
	4 city dairies		18 tanks	Br.
	additional equipt, for 2 dairies (bottling eqpt. incl.)		7 scales	Ba.
			milk pipes	Ba.
			7 can washers	Br.
	56 refrig. & cooling eqpt.		5 bottling chains	Sip.
			11 refrig. equipt. for dairies	Sip.
			laboratory equipt. for dairies	
			Diesel engines etc.	Sip.
			8 pasteurizers	Sip.
			8 clarifiers	Br.
			6 separators	Sip.
			various equipt.	Sip.

Funds were originally allocated for programs in Albania, Bulgaria and Rumania but to date no agreed projects have been developed.

Engineers surveyed several countries of Europe to investigate their specific milk requirements, and also visited countries where milk machinery is manufactured.

The survey established that the postwar level of the milk production in most countries of Europe was far below the prewar rate, and not exceeding 60 percent. In Poland, for instance, domestic milk production could provide about 7 litres of milk per month for children up to 3 years old only. In Finland at the summer peak the milk produced was 60 percent of the needs.

The experts concluded that whatever the quantity of milk available it must be utilized for the greatest benefit of the children for whom milk constitutes an essential and basic food. It will be several years before the prewar level can be reached again, and even so, there will still be a shortage of milk in Europe. The point is not only to increase the quantity of milk available in most European countries but also to improve its quality, often very poor, and make its distribution possible in all seasons and areas.

Child feeding programs developed by UNICEF have now partly relieved the shortage of safe milk in Europe. However these programs are not permanent and the Board has tried to insure milk to children in the needy countries not only for the duration of this worlds relief organization, but in the years to come, in order to have a lasting effect upon child nutrition.

Therefore UNICEF credits were used for the purchase of types of imported equipment which vary according to the specific needs of each country. This equipment ranges from complete milk drying plants to pasteurization, bottling, washing and capping facilities.

In view of the particular status of UNICEF, an organization entirely devoted to the welfare of children, the Executive Board upon the recommendation of FAO, decided that shipment of this special milk equipment, delivered free to various European countries, should be subject to an agreement signed with their respective governments. Under this agreement each government undertakes :

A. to meet the requirements of a sound milk policy as defined by UNICEF, namely, to guarantee as far as possible the continuation of the existing UNICEF milk feeding programs, for the benefit of children, pregnant and nursing mothers,

B. to provide the largest possible share of facilities, including the entire cost of the buildings, internal transport of material and labour.

UNICEF's participation in the milk conservation program consists of supplying only the specialized imported equipment which cannot be manufactured without unreasonable delay in the beneficiary countries.

Details of the program have been worked out in cooperation with, and approved by the Food and Agriculture Organization.

The milk conservation program is well under way in many European countries which have agreed on the general milk policy required by UNICEF. Completion of the program is expected before the end of 1950, and the governments will thus be able to take over UNICEF feeding operations.

The following table shows the current status of UNICEF milk conservation projects :

The latest development to be registered in the UNICEF milk conservation program is the agreement recently signed with the government of Malta for the supply of one large pasteurization plant. A credit of $ 100,000 has been voted by the Executive Board to this effect. The pasteurization will not affect cow's milk as there are almost no cows to be found in the island, but goat's milk, a popular food beverage there. Pasteurization of the goat's milk is designed to combat infectious diseases, particularly brucellosis or undulant fever, which are transmitted to the children through inclean milk.

Credits totalling $ 910,000 had been voted by the Executive Board for the establishment of a milk conservation program in Albania, Rumania and Bulgaria. Since no agreed program has yet been developed, however, the funds have been set aside for further utilization on which the Executive Board has not yet decided.

AGRICULTURAL INDUSTRIES

Equipment and standards for transport of perishable foodstuffs by road

Experts on special road vehicles for the transport of perishable foodstuffs held a three-day session in Geneva in which they defined categories and classes of vehicles according to types and the ranges of temperatures they would maintain inside the body while outside temperatures were within specified ranges. One such class of refrigerated vehicle would maintain inside temperatures of between minus 15° and minus 20° while outside temperatures were as high as plus 40° C.

The experts, convened by the United Nations Economic Commission for Europe, believed that their definitions would make it possible for transport users to be informed precisely of the efficiency which they might expect of various types of equipment. They would also guide manufacturers of lorries, trailers and semi-trailers in their efforts to satisfy existing or potential requirements for vehicles.

Further, the experts believed the standard definitions would assist carriers in their purchases and in the operation of specialized road transport equipment.

A team of experts will be convened to define the minimum equipment standards to provide the efficiency prescribed by the newly established categories and classes of vehicles. This new team was asked to study and report on the different types of insulation and methods of refrigeration, as well as questions related to the construction of vehicles which might give rise to standardization or to general application.

This work in the field of road transport equipment forms part of a general programme of the Economic Commission for Europe to develop and improve the transport of perishable foodstuffs as a means for improving the European diet and stimulating trade in agricultural and dairy products and meat and fish. ECE meetings have already been held on quality standards of perishable foodstuffs, on standardization of packaging and conditions of transport, and on refrigerated transport by rail.

During their session the experts inspected a Swiss refrigerated lorry transporting frozen meat from Lyon, France, to Zurich, Switzerland. This vehicle was capable of maintaining an inside temperature of minus 20° C. It included a refrigeration apparatus which could be operated from electric mains in case its self-contained power unit were out of order or turned off while the driver was at rest.

Participation

The following countries participated in the first session of the ECE Inland Transport Committee's Sub-group on Refrigerated Road Transport Equipment, 28-30 March 1950: Belgium, Czechoslovakia, France, Italy, Netherlands, Sweden, Switzerland, United Kingdom, United States of America and Yugoslavia. Also represented were International Organization for Standardization, International Road Transport Union, International Institute of Refrigeration and the European Union of Coachbuilders.

ECONOMICS AND MARKETS

Dollar area and pound sterling area

As, in the Trade Agreements, mention is frequently made of the 'dollar area' and the 'pound sterling area', it may be as well to publish the countries now included in these zones.

DOLLAR AREA — United States of America, the Philippines and territories placed under the sovereignty of United States, Bolivia, Canada, Costa Rica, Cuba, Ecuador, Peru, Dominican Republic, El Salvador, Newfoundland, Uruguay, Venezuela.

STERLING AREA — Africa: Basutoland, Bechuanaland, Gold Coast, Ashanti, Togoland (under British mandate), Nyasaland, Northern and Southern Rhodesia, St Helena, Seychelles, Sierra Leone, Cyrenaica, Eritrea, Gambia, Kenya, Libya, Mauritius, Nigeria, Cameroons (Br. mandate), Italian Somaliland, Anglo-Egyptian Sudan, South West Africa, Swaziland, Tanganyika, Tripolitania, Uganda, Union of South Africa, Zanzibar.

— America: Bahama Islands, Barbados, Dominica, Grenada, British Guiana, British Honduras, Falkland Islands, Leeward Islands, Windward Islands, Virgin Islands, Montserrat, St Kitts and Nevis, Trinidad and Tobago, Jamaica and Islands, St Lucia, St Vincent.

— Asia: Aden, Burma, North Borneo, Ceylon, Cyprus, India, Federated Malay States and non-Federated Malay States, Hong Kong, Bahrein Islands, Irak, Iran, Koweit, Perak, Sarawak, Selangor, Malacca, Penang, Singapore, Transjordania.

— Europe: United Kingdom, Ireland, Gibraltar, Channel Islands, Isle of Man, Iceland, Malta.

— Oceania: Australia, Fiji Islands, Pacific Islands, British Solomon Islands, Nauru, New Zealand, Papua, Pitcairn, Western Samoa, Tongo.

Trade Agreements

AUSTRIA (*see also* SWEDEN, YUGOSLAVIA).

Austria and the **Argentine Republic** have signed a compensation agreement providing for the exchange of goods to the value of 3.8 million U.S. dollars.

Argentina will deliver to Austria 2,600 tons of meat and 6,000 tons of bacon while Austria will export iron and steel to Austria.

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A trade agreement was concluded between **Austria** and the **Belgo-Luxembourg Economic Union** on 3 November 1949, and will be effective until 31 October 1950.

Austrian goods can be imported into B.L.E.U. territory in any quantity desired except in the case of textile goods for which the quota is fixed at 30 million Belgian francs and paper, at 20 million B. fr.

Austria has agreed to export fixed minimum quantities of steel, iron and industrial products, pitprops (70,000 m^3) and other goods.

Imports into Austria are authorized within quota limits for a total of 900 million B. fr., taking into account the amount of 450 million B. fr. drawing rights granted to Austria by Belgium. The principal B.L.E.U. quota goods are fish (5 million B. fr.), edible oils and seeds (30 million), hops (5 million), sugar (6 million), hides (43 million), washed wool (45 million), worsted (15 million), hare, rabbit and goat skins (12 million), textile goods (50 million), flax (30 million), iron and steel products, chemicals, pharmaceutical products, machinery.

o

A trade agreement between **Austria** and **France** was initialled in Vienna on 25 November 1949. Barring certain products still on the quota list, Austria may export any goods without restriction to France, North Africa and other territories of the French Union. The chief quota products are nitrogenous fertilizers (10,000 tons), steel products, tractors, sawn timber, cotton fabric. Austria has agreed to authorize the importation of several French products including (in French francs) potash (400 million), tanned or raw sheepskins (90 million), calfskin and leather for footwear (70 million), raw cow and ox-hides (40 million), washed wool (100 million). Austria will also grant licences for the importation of cotton fabrics (80 million), worsted (150 million), woollen cloth (80 million), silk and rayon fabric (100 million), real silk thread (50 million), essential oils (40 million), seed potatoes (500 tons), spices (25 million), vegetable fibre (3,000 tons), dates (300 tons), tinned sardines (50 million), red wine (2,000 hl), machines and other equipment.

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A trade agreement was concluded in Belgrade between **Austria** and **Yugoslavia** on 15 November 1949.

Yugoslavia will supply animal feedingstuffs, agricultural produce, medicinal plants and raw material for the chemical industry while it will import electric equipment, chemicals and metal products.

B. L. E. U. (*see also* Austria, Germany, Italy, Turkey).

A joint **Belgo-Luxembourg — Spanish** Delegation met in Madrid from 24 October to 20 November to amend the lists B and E appended to the Hispano-B.L.E.U. trade agreement of 23 April 1949.

B.L.E.U. quota products on the amended lists and exported to Spain include machinery and equipment for different industries (sugar-mills, breweries, dairy industry, saw-mills, paper-making, animal fat extraction, oil palm mills), farm machines; tobacco, cigars (50,000 B. fr.), cigarettes (4,000 B. fr.). Spain will deliver oranges and tangerines (75,000 tons), turpentine (800 tons), cigars from the Canary Islands (4,000 B. fr.).

Quotas for equipment for oil palm extraction, forged chains for maritime, agricultural and industrial use have been discontinued.

Differential rates of exchange (peseta/Belgian franc) were fixed for several export products, including salted anchovies, sweet oranges, green olives tangerines, bitter oranges, grapes, vitaminized tunny, liver oil, capers, beverage wine, fresh chestnuts, garlic, tomatoes, dried apricots, pulp, dried fish, salt, sheep guts, onions, lemons, fresh fish, bananas, dried figs, saffron, bottled olives, anchovies, chillies, citrus extract, cider, sparkling wine, fruit juice, hides, etc., and also for import products: seed potatoes, beet seed, copra, palm kernels, babassu, palm oil, rubber, paper and paper pulp, linseed oil, castor beans, vanilla and spices, livestock products, farm tractors, potato starch, textiles, numerous industrial and manufactured products.

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A third supplementary Protocol to the trade agreement of 2 February 1948 between the **B.L.E.U.** and **Sweden** was signed in Brussels on 8 February 1950. It provides for a temporary trade exchange between the two countries for the first six months of 1950 pending an agreement drawn up on the recommended unrestricted basis, and a new intra-European payments agreement. From 1 January to 30 June 1950 exchange will be limited to goods on the quota lists. Swedish exports to the B.L.E.U. include (in Swedish crowns): cheeses (500), preserved fish (150), fresh fish (100), guts (75), seed (5,000), liquid resin (100), synthetic resin (150), hides and leather (150), sawn lumber (2,500 steres, 500 cr.), telegraph poles (3,650 m^3, 350 cr.), plywood (800), blockboard (400), wood-work and articles (750), wood pulp (10,000 tons, 2,300 cr.), agricultural and gardening tools (50), lawn-mowers (50), wooden machine-tools and spare parts (200), farm machines and spare parts including pruners (1,000), separators, centrifuges, milking machines (875), tractors and spare parts (200), board and match-making machines (550), machinery for the textile industry (250), for the food industry (250), for bottling and canning (100).

B.L.E.U. exports comprise (in 1,000 B. fr.): Belgian Congo coffee (6,000), walnuts, sesame, palm kernels, palm oil (15,000), growing plants and nursery products (3,600), vegetables, fresh fruit and preserves (2,400), Congo derris, pyrethrum flowers, bananas, beans, maize, cassava, vegetable oils and fats (4,000), oilcakes (2,400), chicory (500), hops (500), guts (500), waxes (1,200), Thomas slag (3,000), hides (5,500), belts, industrial articles and leather footwear (7,500), ox and horse-hides from the Congo (400), veneers (800), wooden articles (650), paper (5,000), flax and tow (30,000), washed wool and worsted (12,000), Congo cotton (28,000), cotton waste (7,000), carding wool (30,000), cotton thread (24,000) flax and jute fibre, artificial fibres (4,000), sewing thread (2,000), sewing silk (1,000), manufactured textile goods (100,000), linen fabric (10,000), cord (10,000), felt material (5,000), various textiles (3,000), agricultural machinery, machines for the food and textile industries.

Czechoslovakia (*see also* Denmark, Finland, Poland).

On 21 October 1949 **Czechoslovakia** concluded a trade agreement with **western Germany** for the duration of one year beginning 1 October 1949.

Czechoslovak supplies will total 58,000,000 dollars as against 54,000,000 dollars of German exports. The balance of 4 millions will be compensated by different German services to Czechoslovakia.

Czechoslovakia will mainly supply agricultural produce ($ 40,000,000), while Germany will export machinery, iron and steel.

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On 9 January 1950 **Czechoslovakia** and **eastern Germany** signed a trade agreement which provides for an increase of 56 per cent. in the volume of goods exchanged as compared with 1949.

Among other goods Czechoslovakia will export foodstuffs, textile goods, coke, industrial products in exchange for fertilizers, machinery, manufactured goods, etc.

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Economic agreements between **Czechoslovakia** and **Switzerland** were signed in Prague on 22 December 1949. They include an agreement covering exchange of goods and settlement of payments, which will remain operative up to 31 December 1954. This agreement provides for the drawing up of annual quota lists on which the granting of export and import permits will be based.

DENMARK (*see also* ITALY)

On 17 December 1949 a trade agreement which will be effective up to 30 November 1950 was concluded between **Denmark** and **Czechoslovakia**.

The total value of goods to be exchanged is expected to reach approximately 49 million Danish crowns in each direction.

Denmark will chiefly export butter, bacon, cattle, fish, whale oil, poultry, vegetable and other seed, dried fish, casein, chemicals, pharmaceutical products.

Czechoslovakia will supply textile goods, manufactured products, glassware, iron, etc.

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A trade agreement was signed by **Denmark** and **western Germany** on 24 November 1949 and will terminate on 31 July 1950.

This agreement provides for unrestricted importation into Germany of Danish goods, except for certain products on the quota list and requiring a permit. Danish quota goods include fish (1.5 million dollars), fodder seed (500,000 dollars), vegetable and flower seed (500,000 dollars), spirituous liquors (100,000 dollars), chocolate (100,000 dollars).

Germany has agreed to grant permits for the exportation to Denmark of steel and other metal products and industrial chemical products. In addition a quota totalling 5 million dollars has been fixed for the export of German goods to Denmark. These goods include textiles (1 million dollars), paper and paper goods (200,000 dollars), woodwork (175,000 dollars), wines, essential oils (200,000 dollars).

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A trade agreement between **Denmark** and **Poland** was signed on 7 December 1949, and covers the period from 1 October 1949 to 3 September 1950. Polish exports consist chiefly of coal and metal products, rye, glassware. Denmark will export machinery, bacon and seeds.

FINLAND

A trade agreement besween **Finland** and **Czechoslovakia** was signed in October 1949. It provides for an appreciable increase in the goods exchanged by the two countries, totalling 3 milliard marks as against 2 million marks with the previous agreement.

Finland will mainly supply wood products in exchange for different raw materials, chemicals, fabrics, metal goods.

o

An agreement effective from 1 November 1949 to 30 October 1950 has been signed by **Finland** and **Norway**. It provides for an exchange of goods totalling a value of 65 million Norwegian crowns. Norway will supply herrings, raw material for the margarine industry, chemicals, iron and steel goods, while Finland will deliver timber and wood products, porcelain and metal goods.

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A trade and payment agreement between **Finland** and the **State of Israel** is in force for one year from 10 August 1949.

The Finnish exports will total 3,264,000 dollars and consist chiefly of timber, paper and machinery. Israel will export fruits, certain textiles and chemicals for a value of 1,880,000 dollars.

FRANCE (*see also* AUSTRIA, SWEDEN)

A trade agreement was signed in Paris by **France** and **western Germany** on 10 February 1950, and will remain in force up to 30 June 1950. A large part of the trade will be unrestricted in compliance with OEEC recommendations, particularly for the following French products: fresh and dried fruit, olive oil, tinned sardines, rabbit skins, essential oils, linen and hempen yarn, machinery and industrial products.

Certain classes of goods still come under the quota system, namely dried vegetables (1.6 million U.S. dollars), seeds (1.5 million), early potatoes (20,000 tons), truck crops (2.5 milion), rye (7 million), meat and pork products (20 million) cheeses (1 million), brandy and liqueurs (450,000), wines for distilling (1.050 million), other wines (1.5 million), fruit juice and concentrates (750,000), fish excluding salmon and anchovies (800,000), living and ornamental plants (250,000), woollen yarn (8.5 million), other textile goods. France has agreed to authorize export to Germany of oilseeds (3 million), wheat (100,000 tons), colonial wood (35,000 t.), calfskin, horse and oxhides (100, 150 and 500 tons respectively).

German quota products exported to France include hops (200,000 dollars), sugar-beet seed (150,000 dollars), beer (300,000), growing plants and flowers (50,000), wines (20,000), agricultural produce (300,000), agricultural and horticultural tools (25,000), dairy machines and apparatus and dairy products (100,000), machine-tools for woodworking (200,000), wheeled and crawler tractors (300,000). German products for French North Africa (except Algeria) and French overseas territories comprise tobacco (500,000 dollars), hops (175,000), beer (100,000), sawn lumber (100,000), farm implements (50,000), farm machines (200,000), textile machinery (150,000), machinery for working wood (110,000). Products of German origin and production for which quotas have been suppressed comprise poultry, fresh roes, mushrooms and truffles, olives and capers, tomatoes, onions, garlic, cabbage, spinach and salads, fresh French beans, peas in the pod, egg-plants, pumpkins and other fresh and dried vegetables, starchy roots and tubers, apples, pears, fresh stone-fruits, bran, straw, fecula, bakery products, coffee extracts, food powders and preparations, mineral waters, cider, brandy, liqueurs, spirituous liquors, lemonade, round, hewed and sawn wood.

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A fresh one-year trade agreement was concluded between **France** and **Hungary** on 2 December 1949.

Trade between the two countries will be effected on the basis of two lists of goods with payment through clearing. Goods not on these lists will be handled on a compensation basis.

French products on the list include animals for breeding purposes, hides, cacao beans (400 tons), timber, vegetable fibre, raphia, cork, chestnut and oak extract, phosphates (20,000 tons), steel products, electric equipment.

Hungarian exports to France comprise game (60 million Fr. fr.), butter (200 tons), dried beans (3,000 tons), onions (1,000 t.), tobacco (1,500 t.), sugar (3,000 t.), sorghum straw (250 t.), cotton fabric for overseas territories (185 million fr.).

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By an exchange of letters on 29 December 1949 a program of additional trade exchange between **France** and **Italy** was fixed for the period lasting from 1 January to 30 June 1950.

This program covers the commodities not included in the trade agreement of 8 June 1949, or refers to increases in existing quotas.

Subsequently a Joint Italo-French Committee on terminating their task which lasted from 20 February to 11 March 1950, decided that the validity of the aforesaid agreement, appended protocol and letters would be extended up to 31 December 1950. The lists annexed to this agreement are replaced by new quota lists.

Many commodities have been released.

French quota goods to be exported to Italy include beef cattle (3,500 head), beef (2,000 tons), sauces and condiments (20 million fr.), fresh or frozen fish (5,000 t.) canned fish (1,500 t.), other canned goods (15 million fr.), smoked and salted fish (5 million fr.), seed grain (1,000 t.), dates (300 million fr.), olive oil (3,000 t.), esparto (1,500 t.), vegetable fibre (600 tons), linen fabric (10 million fr.), embroidery cotton (125 million fr.), cotton cloth (80 million fr.), woollen cloth (190 million fr.), rags for paper and other technical uses (25 million fr.), vegetable fibre and camel-hair belts (30 million fr.), engines for farm use, machines (mowers, threshers, harvesters, flax harvesters, potato diggers, beet lifters, separators) (125 million fr.), spare parts for farm machinery (25 million fr.), power cultivators (50 million fr.), textile machines and spare parts (250 million fr.), machines for fishing nets (15 million fr.), oil-mill equipment, excluding presses and millstones (100 million fr.), œnological machines and equipment (35 million fr.), machinery for food industries, mills, refineries, breweries (130 million fr.), bottling and packing machines (30 million fr.), essential oils, except citrus (250 million fr.), non-cupric parasiticides (20 million fr.), superphosphates (15,000 t.), potassic fertilizer (10,000 t.), medicinal plants (14 million fr.), coriander seed, hides, cassava (1,000 t.), tapioca (1,000 t.).

Supplementary commodities include bottled champagne (40 million fr.), bottled cognac (40 million fr.), armagnac brandy (20 million fr.), name-brand wines (3 million fr.), liqueurs (10 million fr.), rum (3 million fr.), brandy and aperitifs (2 million).

Italian quota exports to France comprise Parmesan cheese (200 tons), fresh market garden produce (5,000 t.), fresh fruit (2,000 t.), almonds (3,000 t.), rice (21,000 t.), mustard seed (3 million fr.), beet seed (10 million fr.), medicinal plants (25 million fr.), reeds (15 million), sausages (50 million fr.), condiments and spices (10 million fr.), raw tobacco (3,000 tons), nitrogenous fertilizers (2,000 t.), tanned hides (60 million fr.), raw and carded hemp (5,000 t.), hemp waste (200 million fr.), cotton fishing nets (1,000 t.), farm machinery (28 million fr.), machines for food processing (190 million fr.), cotton fabric, etc.

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A trade agreement between **France** and **Pakistan** was signed in Karachi on 29 November 1949. This agreement covers a period of one year effective from day of signing.

Pakistan will supply France with raw jute (80,000 tons), raw cotton (40,000 t.), oilseeds (5,000 t.), natural wool (1,000 t.), raw hides (2,000 t.), tea and other articles. France will send machines, cast iron, steel, wood, tea-chests, fabric and yarn, dyes, etc.

o

France and **Paraguay** on 19 December 1949 signed a trade and payment agreement valid for one year. This agreement provides for goods to be exchanged on either side to the value of 1,080,000 US dollars. Operations will be effected debit or credit on the 'special Paraguayan accounts' held for order in non-transferable dollars. The principal French export products are wine, liqueurs, cotton and other fabrics, tractors.

GERMANY (*see also* CZECHOSLOVAKIA, DENMARK, FRANCE, YUGOSLAVIA)

A trade agreement between **western Germany** and the **Belgo-Luxembourg Economic Union** was signed on 17 November 1949 for the period from 1 October 1949 to 30 September 1950.

The agreement based on the free trade principle provides that the authorities of western Germany shall make available to importers a quarterly quota of 20 million dollars of which 3.4 million dollars will serve for imports of fresh vegetables, fish, seed, spirituous liquors, wines, soaps and wireless equipment. The merchandise which will be imported with the remainder of the dollars has not yet been specified.

The B.L.E.U. will permit the importation of German products within quota limits which will be decided each quarter. Imports of livestock, fish, ornamental flowers, potatoes, hops and wheat will be restricted to a quarterly value of 3.5 million dollars in all.

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A trade agreement covering one year was signed on 25 October 1949 at Frankfort by **western Germany** and **Ecuador**. Goods will be exchanged to the value of 5.5 million dollars in each direction. Germany will supply essential goods including agricultural and industrial machinery, rubber articles, etc. Ecuador will export chiefly oilseeds, cacao beans, rice, coffee, bananas.

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On 31 October 1949 in Tokio **Germany** and **Japan** concluded the first trade agreement since the war. This agreement is valid from 1 August 1949 to 31 July 1950 and provides for an exchange of goods to the value of 20 million dollars. Japanese exports will consist mainly of raw silk, cotton fabric and yarn, metals. Germany will supply iron and steel products, chemicals and machinery.

o

A trade agreement between **western Germany** and **Pakistan** was initialled on 19 December 1949 in Frankfort. A mutual most favoured nation treatment will be applied. Pakistan will furnish about 20 million dollars' worth of wheat, and cotton, jute, hemp, vegetables, etc. for another 20 million dollars.

Germany will mainly export iron implements, steel, glassware and ceramics.

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On 11 November 1949 **western Germany** and **Spain** signed a supplementary agreement which provides for the exchange of goods to the value of 8 million dollars. Spain will export oranges, bananas and other foodstuffs to the value of 4.5 million dollars while Germany will export chemicals, machinery, optical instruments, etc.

o

On 26 November 1949, in Frankfort, **western Germany** and **Sweden** signed a trade agreement without restrictions except for imports into Germany of paper and paper goods, cellulose, fish, tinned fish,

sawdust which are still subject to control. Sweden authorizes unrestricted importation only of essential goods. The quotas established by the previous agreement will continue to be applied, although an increase of 2 million dollars has been made.

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A trade agreement covering two years was signed by **western Germany** and **Uruguay** in Montevideo on 14 October 1949. It provides for the exchange of goods to the value of 140 million dollars per year. The principal Uruguayan products are (in dollars) wool (20 million), dried and salted hides (6 million), seeds and linseed oil (5 million), chilled meat (12 million), wheat and flour (4.5 million), other oils and oilseeds (5 million), rice (4 million), oilcakes (2.5 million). German deliveries will include farm machinery and tools (15 million), casks (1.5 million). industrial products, electric equipment, motor-cars, chemicals.

GREECE

On 15 February 1950 a Protocol extending up to 31 December 1950 the trade agreement dated 12 March 1949 was signed between **Greece** and **Norway**. This Protocol was designed to regulate the commercial regulations between the two countries and, in particular, to find a means of utilizing the drawing rights of two million US dollars granted by Norway to Greece for 1949 and 1950.

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A trade and payment agreement was signed in Lisbon by **Greece** and **Portugal** on 31 December 1949. This agreement which will be effective for one year beginning 1 January 1950, provides for Portuguese exports to Greece for a value approximating 2 million dollars. These exports include (amount in dollars) dried vegetables (350,000), coffee (200,000), cacao (200,000), oilseeds (100,000), fertilizers (35,000), tinned sardines (70,000), cork in sheets (500 tons), cork stoppers (20,000 dollars), merino wool (120 tons), timber (3,000 m^3), chemicals and other articles.

Greek exports to Portugal will consist of (in dollars) tobacco (750,000), tanning extracts (50,000), silk fabric (25,000), sponges (25,000), currents, cigarettes and other goods, cement, emery.

ITALY (*see also* FRANCE)

Following an exchange of notes on 24 December 1949, the trade agreement between **Italy** and the **Belgo-Luxembourg Economic Union** was extended for another year. The terms of this agreement remain unchanged except in the case of Italian exports of goods requiring a licence and which are now included among the goods for which payment will be made in clearing and for which exportation is authorized direct by the outgoing customs. Exports include rice, lactose, raw tobacco, dyed goat and lambskins, tanned and semi-tanned skins, leather.

For certain exports of the B.L.E.U. which were formerly authorized direct by the customs as, for example, oils from the Congo (sesame, groundnut, palm kernel, castor, boleka), a special permit from the Ministry of Finance will now be required.

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A Joint **Italian-Danish** Committee consequent on the trade agreement of 18 June 1949, signed, on 10 February 1950 in Rome, a statement by which the Danish Government extended to Italy the no-quota system in conformity with the OEEC resolutions, and postponed until 31 May 1950 — date of expiry of the agreements in force between the two countries — examination of the adoption of the clearing system for settling trade exchange transactions.

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A supplementary Protocol to the agreement of 16 December 1948 between **Italy** and **Hungary** regulates trade exchange for 1950 with new quota lists. The total value of the goods to be exchanged between the two countries is less than last year. The quotas for some products have been increased, while others have been reduced.

Hungaria products exported to Italy will include beef cattle (8,000 head), live game (60 million It. lire), leeches (5 million lire), dressed poultry (500 tons), canned meat and geese livers (30 million lire), eggs (500 t.), butter (400 t.), veal (500 t.), wheat (20,000 t.), oats (5,000 t.), bran (5,000 t.), brewer's barley (4,000 t.), brewer's malt (2,000 t.), pulses (3,000 t.), paprika (5 million lire), grains (248 million lire), nicotine (100 million lire), 60 threshers and spare parts (50 million lire) grindingstones (5 million lire), medicinal plants (100 million lire), raw material for chemical and pharmaceutical industries.

Italian exports will comprise citrus fruits (5,500 t.), raw hemp, tow, cord (4,000 t.), salted guts (20 million lire), raw and manufactured cork (100 t.), colophony (500 t.), grains (50 million lire), animal fibre (40 million lire), medicinal plants (50 million lire), hempen cord, cloth and products (50 million lire), tractors (100 million lire), sulphur, motor-cars.

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A new trade agreement has been signed by **Italy** and **Portugal** for a period of one year beginning 18 February 1950. The goods exchanged will total a value of 16 million dollars, Italian imports amounting to 7 million and Portuguese imports to 9 million. Payments will be made under the clearing system. Portugal will mainly export to Italy raw hides, natural wool, colonial oilseeds, timber, colophony, oil of turpentine, tinned fish, salted, fresh and frozen fish, fish oil, palm oil, coffee, cacao, tea, ore. Italy will supply textile goods in real silk, wool and artificial fibre, farm machinery and tractors, machines for the textile industry and flour-milling, iron and steel products, mechanical equipment, chemicals. Quotas will be applied on both sides for essential oils, medicinal plants, wines, cork, etc.

NETHERLANDS

A trade agreement between the **Netherlands** and **Yugoslavia** was signed in Belgrade on 8 November 1949. Valid up to 1 November 1950, this agreement provides for the exchange of goods to the value of about 106 million florins. The Netherlands will receive maize, tobacco, wood products, hemp and non-ferrous metals in exchange for tin, coke, rubber, chemicals.

POLAND (*see also* DENMARK)

A Protocol was signed in Warsaw to establish the trade exchange program between **Poland** and **Czechoslovakia** within the framework of the 1947 agreement. Poland will supply agricultural produce, pit-coal, zinc and machinery in exchange for tractors and farm machines for the mechanization

of Polish agriculture, footwear, etc. This Protocol increases the volume of goods exchanged 25 per cent. compared with that of 1949.

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The Protocol which regulates the exchange of merchandise between **Poland** and **Sweden** up to 31 October 1950 was ratified in Stockholm on 29 December 1949. Polish exports to Sweden will amount to 265 million crowns and Swedish exports will cover 200 million crowns of which 100 million will serve to carry out earlier orders. Of the difference of 65 million crowns, 20 million represent former commitments which Poland still has to fulfil and 45 million will be paid by Sweden in free foreign exchange.

Polish exports include sugar (3,200 tons), textile goods, chemicals, coal. Sweden will supply breeding stock, cellulose, iron ore and goods, steel, etc.

PORTUGAL (*see also* GREECE, ITALY)

Following exchange of notes a preliminary agreement was concluded between **Portugal** and **Argentina** pending further negotiations with a view to expanding trade between these two countries. By the terms of this preliminary agreement Portugal undertakes to purchase 20,000 tons of rye, 8,500 tons wheat. Argentina will grant exchange permits for the importation of cork (80 per cent. raw and 20 per cent. manufactured, to the value of 18 million escudos), pitch and resin (3,400,000 escudos), turpentine and wines (2,500,000 escudos).

SWEDEN (*see also* B. L. E. U., GERMANY, POLAND)

A supplementary Protocol to the trade agreement in force between **Sweden** and **Austria** was signed in January 1950. It regulates trade exchange for the year 1950 to attain a volume of 40 million Swedish crowns (approximately 8 million dollars) by each contracting party. New lists of commodities for which import is restricted include Swedish paper, separators, iron and steel products. Austrian goods comprise wool, cotton, other textiles, etc.

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Sweden and **France**, on 15 December 1949, signed a one year's agreement to replace that of 25 February 1949.

French goods which are still imported into Sweden according to quota include tomatoes (400,000 Sw. cr.), bananas (2 million cr.), figs, walnuts and almonds (600,000 cr.), dates (500,000 cr.), olive oil (500,000 cr.), preserved vegetables and fruit (650,000 cr.), fruit and tomato juice (250,000 cr.), raw phosphates (250,000 cr.), timber, wool, textile goods, leathers, pharmaceutical products, tyres, etc. The importation of citrus fruit, wax, wines and liqueurs, citrus oils is not restricted by quota.

Swedish goods exportable to France are (in Swedish crowns) cheeses (11 million), various commodities (lactose, biscuits, beer, etc. — 1,250,000), dairying machinery (12 million), farm tractors (4 million).

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Sweden and **Norway** signed in Oslo a trade agreement which provides for an exchange of goods in 1950 to the value of 175,000,000 Swedish crowns (Swedish exports to Norway) and 170,000,000 Swedish crowns (Norwegian exports).

Sweden will mainly export wooden articles, cellulose, iron ore and products, steel, electric equipment. Norway will supply rough timber, fats-salted fish, sulphur, pyrites.

TURKEY

On 25 February 1950, in Ankara, **Turkey** and the **B.L.E.U.** extended the trade agreement in force between the two countries since 2 December 1948 up to 30 June 1950. New quotas have been fixed for the importation into Turkey of textile products and chemical fertilizers. The appendix to the aforesaid agreement, relative to the special regulations for tobacco, has been renewed.

YUGOSLAVIA (*see also* AUSTRIA, NETHERLANDS)

A trade payment agreement was signed by **Yugoslavia** and **Austria** in Belgrade on 12 November 1949, to be effective from 25 October 1949 to 24 October 1950. The volume of goods to be exchanged either way amounts to 28,000,000 dollars instead of 21,000,000 dollars as in the previous agreement. The agreement, however, limits the debit balance authorized on either side to 4,000,000 dollars.

The Austrian products exported include machinery for saw-mills (300,000 dollars), tools (800,000), dollars electric motors, telephones, etc.

Yugoslavia will export fruits and vegetables (1.6 million dollars), red wine (3,000 hl.), hides (1,000,000 dollars), poultry (400,000 dollars), maize (25,000 tons), tobacco (1,000 tons).

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Yugoslavia and **western Germany** have signed a new trade agreement for 1950 for a mutual exchange of goods to the value of 126 million dollars.

Yugoslavia will supply wheat, meat, eggs, fodder, lumber and wood products to the value of 65 million dollars. Germany will export textile goods, leather, articles, paper, steel, iron, machines, etc. for 61 million dollars.

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A trade agreement between **Yugoslavia** and the **United Kingdom** was signed in Belgrade on 26 December 1949. This agreement will be effective for five years; goods totalling 220 million pounds sterling will be exchanged.

With a view to facilitating purchases the British Government has accorded Yugoslavia a banking credit guaranteed by 8 million pounds refundable in 5 years.

Yugoslavia will furnish timber, maize, non-ferrous metals. The United Kingdom will export raw wool, woollen and cotton yarn, wollen and cotton fabric, rubber goods, industrial products, machinery, two coasting vessels.

The annual volume of purchases will amount to 16-17 million dollars in each direction for the first year and will increase to 25 million in the last year of the agreement.

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On 5 January 1950 **Yugoslavia** and **Uruguay** signed a trade agreement in Montevideo operative up to 31 December 1952. Each country will exchange goods to the value of 5,300,000 dollars. Both countries have agreed to the most favoured nation system. Yugoslavia will mainly supply timber, not including plywood ($ 2,800,000), chemicals, ethyl alcohol.

Uruguay will export wool ($ 300,000), flax seed and linseed oil ($ 400,000), industrial tallow (dollars 150,000), hides and leathers, etc.

FISHERIES

Herring production : methods of processing

by ANDREW ANDERSON, *Chief Fisheries Adviser to Britain's Herring Industry Board and formerly Fishery Officer of the Scottish Home Department.*

Britain has long been noted for the excellence of her pickle cured herrings, and generations of practice have brought the art of herring curing to a very high standard.

United Kingdom cured herrings, indeed, are found in every country in the world in which there is a taste for this class of product.

The process of producing pickle cured herring is, briefly, as follows. The newly-caught herrings are sprinkled with salt to prevent deterioration and then put into boxes or 'farlanes' at which the girls who gut the fish stand. In the gutting operation, each fish is handled separately, the girl removing the gills and the gut by one movement with a short-bladed knife. Simultaneous with the gutting the girl also selects the fish, and as many as ten selections are made, according to the season and the quality of the fish.

After the herrings are gutted they are placed in a 'rousing' tub and again sprinkled heavily with salt. This time the salt is mixed thoroughly with the herrings so that every part of the fish is covered. This is an important part of the process, as it prevents the fish from adhering to one another.

Before being cured, the newly-caught herrings are gutted by machines, one of which can be seen in operation in this picture. The flavour and quality of herrings processed in the United Kingdom are known the world over.

Packed In Barrels.

The gutted herrings are then packed on their backs in barrels. Each tier is packed transversely to those in the tier underneath. The herrings are drawn closely together, the heads of the fish being kept close to the sides of the barrel. Each tier is sprinkled with sufficient salt to complete the cure and to suit the requirements of the market for which the herrings are destined.

Herrings being hung in a smoke chamber in a Scottish fishing port. Previously immersed in brine after cleansing, the fish are dried, coloured and flavoured by the smoke which is produced by a fire of woodchips and sawdust This process is known as kippering.

During a period of ten days the herring 'pine' or shrink, after which the surplus pickle is run off. The space thus left in the barrel is then tightly packed with herrings of similar quality and size and the barrel is then headed up and coopered. Pickle is poured back through a bung-hole until the barrel is full and the herrings are then ready for export and consumption.

Connoisseurs of this particular delicacy prefer the herrings to mellow and mature for a period of up to six months after the curing process is completed before they consider the fish have attained their best flavour.

Smoking Over Oak Fires.

The term 'red herring' originally referred to the very hard (almost leathery) smoked whole herring of dark red appearance formerly eaten in quantities in Britain. Today the term applies more to herrings with a golden appearance, cured for the Mediterranean markets.

The herrings, heavily salted, are stored in large tanks for up to 14 days before being taken out and smoked with intense smoke obtained from burning oak dust. The length of time in the tanks depends on the market to which the herrings are being dispatched. The smoking period also varies in accordance with the time the herrings have been in salt, and their ultimate destination, and may be from 24 hours to seven days. Ambient temperature and relative humidity directly affect the time taken for smoking and have to be carefully studied.

The art in 'curing' of this kind is to secure the proper balance between the degree of salting

and the degree of smoking to give the herrings the necessary flavour and keeping qualities.

Quick-frozen herrings can be described briefly as freshly-landed herrings that have been frozen through in a period of approximately two hours to a sub-zero fahrenheit temperature of about minus ten degrees.

Air-blast Freezing.

There are two principal methods of quick freezing herrings at present in use in Britain. The first, using a rapidly moving current of cold air is known as air-blast freezing. In this process, washed and drained herring are first weighed and packed into shallow metal trays. The trays are placed in open-framed trucks, which allow the very cold air-blast free passage over all parts of the trays. The trucks progress slowly through a closed, insulated tunnel where large fans force air between banks of refrigerating pipes and through the open trucks carrying the trays of herrings. No wrapping is necessary as the fish freeze together and form a block.

The second method of quick-freezing is by contact under pressure with plates in which the refrigerant circulates. The herrings, after being washed and prepared, are either wrapped in waxed paper or in shallow waxed cartons which are placed in aluminium trays and inserted in insulated cabinets between a series of pairs of freezing shelves. These shelves, or plates, are brought together by hydraulic pressure until they make close overall contact with the fish. After freezing, the fish are packed and stored.

During the time the herrings are undergoing quick freezing the temperatures of both air-blast and plate freezers may be of the order of minus 40 degrees fahrenheit.

Kippering.

Kippers produced from United Kingdom fresh herrings are consumed mostly in Britain but there is a growing demand for them in overseas markets because of their high quality.

To make kippers, the herrings are first split down the back, either by machine or by hand and the gills, viscera, roes or milts are removed. The herring are thoroughly cleansed in running water and immersed in brine — the density of which is determined by the individual curer — for a period of approximately 20 minutes. The herrings are then placed on 'tenter' rods which are hung in a smoking kiln. Smoke, produced by fires of wood chips and sawdust placed at the bottom of the kiln, dries, colours and flavours the herrings. Before wrapping and packing in boxes, the kippers are allowed to cool.

Apart from the foregoing methods of treatment and canning, herring may be preserved by marination. Marinating processes are many and varied, each processor having his own formulae and adopting his own methods of treatment. Marination is a method of curing in which, vinegar, acetic acid and sugar may be used in substitution for or in addition to salt, as the preserving medium. Marinades usually contain spices or special sauces made with wine or oil or cream and the herring may be raw, pickle-cured, lightly-smoked or 'redded' prior to being marinated.

Norwegian fisheries in 1949

In recent years great efforts have been made to promote scientific research in the Norwegian fishing industry. The first step in this direction was the building of the two research institutions of the Directorate of Fisheries : the Oceanographical Institute and the Techno-Chemical Research Institute.

The herring oil and herring meal industry has established its own research institute at Bergen. A laboratory engaged in the study of fish freezing methods has been set up at Bodö, while another, mainly concerned with the problems of klip-fish production, is operating at Kristiansund.

Two new fishery research vessels have recently been completed. One, the 600-ton vessel 'G.O. Sars', is undoubtedly one of the best equipped fishery research vessels, and the other, 'G.M. Dannevig', is a 65-feet specially equipped fishing smack, to be employed on investigations in the Skagerrak and the Cattegat. The Norwegian Oceanographical Institute has also a third vessel, the 'Johan Hjort', and should therefore be well equipped to deal with problems calling for solution.

Both the fishing industry and the fishermen's organizations have contributed large sums to the abovementioned laboratories and are providing substantial contributions toward operation costs.

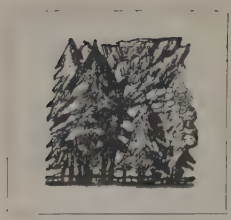
Exports.

It may be safely predicted that the value of 1949 exports of fish and fish products was well in excess of 500 million kroner. The value in 1947 was 515 million kroner, and, in 1948, 547 million. Salted herring exports reached a particularly high level last year. It is expected that the whole output of salted herring will be disposed of by the time this year's catch is ready for the market. The fresh herring export trade has also been satisfactory; as of 3 December, 96,350 tons of fresh herring had been shipped abroad.

The fresh fish export trade has had an unusually large turnover. By 3 December, a total of 36,000 tons had been shipped, of which 15,000 tons were codfish, and by the same date, frozen fish exports had reached 16,500 tons.

There are prospects of working up a market for Norwegian frozen fish in the United States.

By 3 December, 30,000 tons of klip-fish had been exported, Brazil being the principal market; and shipments of stockfish had reached 6,600 tons.



FORESTRY

Timber trade prospects forecast for 1950 and 1951

(*Economic Commission for Europe*)

European and overseas supplies of softwood and European and Mediterranean import demands for softwood are expected to be approximately balanced during 1950 even if the U. S. S. R. increases its timber exports to Western Europe. This forecast was made by the United Nations Economic Commission for Europe's Timber Committee in Geneva 5 April.

It noted that this apparent equilibrium arose within the framework of present restricted consumption levels in Europe, and for this reason declared that it could not be maintained that there was no general timber shortage in Europe.

The attainment in 1951 of a balance between demand and supply, including imports from the dollar area, is expected to be more difficult because conservative estimates indicate increased import demands while export availabilities show a downward trend. According to the Committee there appears to be no indication of a sawn softwood surplus position developing in 1950 and 1951.

The Committee urged a maximum possible reduction in the burning for fuel of wood which was useable for industrial purposes.

Representatives of importing countries stressed the importance of their being able to import sawlogs, within the limits of the quantities available before the war, for conversion in their domestic sawmills. The lack of these, they said, created a real problem in their countries. In this connection, the importing countries noted the apparent change in policy evinced by the report of Western Germany precluding all exports of sawn softwood and softwood logs from that area.

Delegations from fourteen European countries and Canada, Egypt and the United States of America participated in the Committee's three-day sixth session. The FAO cooperates in the work of this committee.

French Forest Fires.

The Committee this session, as at its previous session, heard a statement by the representative of France on the disposal of timber damaged by the disastrous 1949 fires in the Landes district. It noted the effective action which had been taken by France and registered the willingness of member countries to give such further assistance in the disposal of remaining surplus quantities as lay within their power. The French representative stressed the existence of large quantities of unsold firekilled wood suitable for the manufacture of kraft pulp.

More Rational Use of Wood.

The Committee received a further report on the progress of its study on a more rational utilization of wood and agreed that the most rational use of wood was in the interest of the economy of all countries. The report was presented by its expert consultant, Mr J. Campredon (France), who stated that a large number of governments had nominated experts to consult with him. The Committee approved his proposal that these experts be brought together early in July as a working party whose task would include suggesting practical steps in implementation of recommendations already made, and proposing further measures for adoption by governments. The working party was also asked to consider a proposal for the establishment of a European Timber Documentation Centre. Its report on these subjects is to be presented to the Committee's next session.

Timber Utilization Trends.

The representatives of France and Switzerland expressed their views that the use of substitute materials for wood in certain timber producing countries represents problems in the sales of timber in those countries, particularly as far as medium and lower grades are concerned. Progress in rationalization in the use of wood was necessary to enable it better to withstand the competition of substitutes which had established themselves during the timber shortage period.

The Committee agreed that economic considerations in each particular country would decide whether and to what extent substitutes would continue to be employed in place of timber. The question of the use of wood substitutes was referred to the working party of experts to meet in July.

Price Index Study.

The representative of Switzerland proposed that the Secretariat study the possibility of formulating internal price indices for timber in each country as a guide to changes in demand and supply. These would be correlated with general price movements. Although realizing the complexity of the problem, the Committee approved the proposal and invited th representative of Switzerland to collaborate with the Secretariat in preparing the report which would be available at the Committee's next session.

Pitprops for 1950.

The Committee established, with qualifications because of limited information, the possibility of a deficit between import requirements of pitprops and export availabilities for 1950 of 423,000 solid cubic

metres. This deficit represents less than 3% of estimated requirements for the year. Although the figures of certain countries already envisage some reduction in stocks over the year, the Committee considered that the deficit could, if necessary, be met from current stocks in the hands of consumers. Therefore, it considered on the basis of data before it that pitprop requirements during 1950 are likely to be met.

Pitprops for 1951.

The deficit between import requirements and export availabilities revealed for 1951 was estimated to be somewhat above 1,000,000 solid cubic metres. The Committee observed that it is normal to find a large deficit in forecasting so far ahead. The present figure was not at this stage considered alarming. Experience has shown the effect changes in the demand of pulpwood have upon pitprop availabilities, and the position for 1951 will need to be kept under review, the Committee said. In this connection, it noted the stimulating effect on production of the early placing of contracts.

Latin-American Forest Products.

The Committee noted a resolution of the FAO Latin-American Commission for Forestry and Forest Products indicating the desirability 'that European concerns be permanently informed of the possibilities offered by the Latin-American Continent' in anticipation of further developing markets for Latin-American forest products.

Softwood Prospects for 1950.

In drawing up its usual balance sheets of softwood export supplies and import demands, the Committee established, on the basis of minimum and maximum data, figures varying from a deficit of 173,000 standards* to a possible surplus of 262,000 standards in case all countries attained their maximum possible exports.

Export Supplies			
From Europe :	1,935,000 to	2,305,000	stds.
From Overseas :	425,000 to	500,000	stds.
Total	2,360,000 to	2,805,000	stds.
Import Demand			
European :		2,283,000	stds.
Mediterranean countries & others normally exporting :		250,000	stds.
Total		2,533,000	stds.

Participation.

Representatives of the following countries took part in the ECE Timber Committee session held 3 through 5 April 1950 : Austria, Belgium, Canada, Denmark, Egypt, Finland, France, Italy, Luxembourg, Netherlands, Norway, Poland, Sweden, Switzerland, United Kingdom, United States of America, Yugoslavia. Czechoslovakia sent a telegram expressing regret at its inability to attend. Mr A. Ceschi (Austria) was elected Chairman, and Mr A. Kouwenaar (Netherlands) Vice-Chairman.

Reafforestation in Morocco

With a view to encouraging reafforestation in Morocco both on national and collective land — operation restricted until now by the financial limits of the Forestry Service — and on private property, a National Forest Fund has been established (Dahir of 12 September 1949). This Fund is maintained by a 10 per cent. (maximum) tax levied on the price obtained for the principal forest and esparto products.

The income received from this tax will be divided as follows : 5 per cent. for forestry research, 80 per cent. for reafforestation distributed in the form of subsidies in kind (seed or plants) or in the form of loans for reafforestation operations repayable in 25 years at 0.25 per cent. interest, or else for the execution of reafforestation work on land under State supervision, on national, collective or private land. In the last instance the expenditure with interest of 0.25 per cent. will be refunded to the State by deductions from the profits (up to a maximum of 50 per cent.). (*Revue Agricole de l'Afrique du Nord*, n° 1590, 20/1/1950).

U.S.S.R.

During 1949 protective forest belts have been established in the U.S.S.R. on an area of over 500,000 hectares. Plans call for a still larger area in 1950. (*Isvestia*, 30/12/1949 ; article by B. Saveliev).

PLANT DISEASES AND INSECT PESTS

Plant protection and the battle against the Colorado beetle

(*Extract from a document submitted to the 2nd Meeting of the European Committee on Agricultural Technology, held at Geneva* 27-30 *March* 1950).

Representatives of European governments meeting on the occasion of the Fourth European Conference for the Control of the Colorado Beetle, convened by the Italian Government in Florence, 24 to 28 January 1950,

Recognizing the invaluable work effected in the past by the Committee for the Control of the Colorado Beetle and by various other organizations working in the field of plant protection in Europe, and

* A standard is 4.67 cubic metres, or 1,980 board feet of sawn wood.

Realizing the urgent necessity for more coordinated action in this field

Recommended that there be established in Europe an Inter-Governmental Organization for Plant Protection, charged with the responsibility for :

a) Combating a limited number of the more important plant pests and diseases affecting international traffic in plants and plant products, and later to be specified ;

b) establishing a service for the exchange of information on the incidence of plant pests and diseases ;

c) providing for the exchange of information on national plant quarantine legislation, or other measures affecting the free movement of plants and plant products ;

d) studying the possibility of simplification and unification of regulations and certification of procedure in this field ;

e) arranging for the exchange of scientific information and for the coordination of research utilizing for this purpose such existing or future bodies as may deal with problems of agricultural zoology, phytopathology, chemical and biological control, etc.

f) administering the funds made available by its Member Governments for these purposes.

In passing this resolution the Conference realized that FAO is proceeding with the revision of the International Plant Protection Convention, Rome, 1929, as also with an international scheme for the exchange of information on plant pests and diseases. The European Plant Protection Organization referred to in the resolution would, it is hoped, be recognized by FAO as the independent regional organization for Europe coming within the framework of FAO's plant protection measures on a world scale.

* * *

During the Meeting of the European Committee on Agricultural Technology, which was held in Geneva,

The Committee noted the action taken on the basis of recommendations made at its First Meeting to coordinate plant protection activities in Europe through extension of the scope of the European Committee for Control of the Colorado Beetle, and approved the plans for establishment of a European Plant Protection Organization discussed at the International Conference on Plant Quarantine Regulations sponsored by the Netherlands Government in collaboration with FAO at The Hague, 26 April-3 May 1950.

The Committee noted and approved FAO proposals for revision of the International Plant Protection Convention at Rome, 1929, and for incorporation into that revision of provisions which should be retained from the now obsolete Phylloxera Convention at Berne, 1881.*

* Extract from the Final Report of the Second Meeting of the European Committee on Agricultural Technology, Geneva, 27-30 March 1950.

RURAL WELFARE

Plans of Rural Welfare Division in Europe for 1950

(Communication from Rural Welfare Division, Washington).

Rural Welfare in Mountain Areas.

Prior to the Fifth Session of the FAO Conference, certain member countries in Europe requested that FAO give special attention to improvement in the conditions of life amongst rural populations in mountain areas. In many countries the need for improvement is greatest in such areas, and the methods required to meet the needs are often different from those facing other sections of rural populations. During the Conference a Working Party of delegates from European countries was held which recommended that studies be undertaken of rural problems and programs amongst mountain peoples in both European and Near Eastern countries, and prepared a preliminary outline of topics to which consideration should be given in this inquiry. The Conference approved this recommendation and invitations have been addressed to European and Near Eastern countries in which the problems of welfare in mountain areas are important to provide information on the basis of which a report will be prepared.

Should it be the wish of member countries a technical meeting or meetings might be held at a later date for which the survey will provide documentation.

Rural Life Conferences in European Countries.

During the Conference a number of European countries also expressed an interest in holding national rural life conferences as a means of collecting information and defining more clearly the problems of rural welfare. The Conference drew the attention of member governments to the need for providing information on rural welfare problems and programs in their Article XI reports during 1950, and suggested that information might be collected by holding national rural life conferences, studies or other means, and that the results be made available to FAO. Communications have been addressed to member countries drawing attention to the proposal of the Conference and suggesting a list of topics from which a selection might be made for discussion at national rural life conferences should member countries decide to hold them.

The Conference also requested the Director-General to explore the possibility of arranging a European life conference late in 1951, in collaboration with other international organizations. Inquiries

have been addressed to member countries in Europe in order to ascertain whether they would be in a position to participate in a European Rural Life Conference in 1951 and to obtain suggestions as to the topics which they would wish to see discussed should such a conference be held.

Development of Cooperatives.

Increasing attention is being paid by FAO to the development of cooperatives. In this, as in other appreaches to rural welfare, special emphasis is placed on those areas and those sections of rural populations in which the need for betterment is greatest. Nevertheless, the interests of economically advanced countries have been given attention, and in respect of Europe a beginning has been made by a study on Cooperative Purchasing in collaboration with the International Federation of Agricultural Producers. Constituent members of IFAP in European countries have given advice and provided information in the preparation of the inquiry, and consultations will be held as to how best FAO may further supplement studies and other activities which these members contemplate. In its work on cooperatives FAO collaborates closely with ILO; FAO is represented on the ILO Advisory Committee on Cooperatives and on its Working Party on Intercooperative Relations. On the other hand, ILO is represented on the FAO Standing Advisory Committee on Rural Welfare.

As a means of facilitating relations between cooperatives in different countries, arrangements are under way for exchange visits between leading cooperators in the United Kingdom and the United States. This is in the nature of an exploratory project which should provide guidance in the promotion of further exchanges between cooperators in other countries should these be desired.

Home Economics and Work with Rural Women's and Young People's Organizations.

Plans are being completed by the regional offices in Cairo and Rome for the visit of the Home Economics Officer of the Rural Welfare Division, Miss Margaret L. Nochein, to the Near East and Europe, May-September, 1950. In response to requests from member governments she will spend six weeks in Egypt, Syria and Lebanon and then visit Yugoslavia, Switzerland, France, England, Belgium, Netherlands, Sweden, Finland, Norway, Denmark and Ireland.

These visits are being undertaken for the purpose of discussing problems and methods in Home Economics education and training, conferring with rural women's and young people's organizations on their programs and securing their assistance in a Survey of Rural Women's and Young People's Organizations, investigating the possibilities of providing teaching aids and other materials, and examining the needs for and availability of technical assistance.

Special attention will be given to contacting handicraft training centers and small industries with a view to discovering the nature and extent of work being done, potentialities for development and implications for other areas (for example the Near East), the organization of rural handicraft services, and methods of training.

En route to the Near East the Home Economics Officer will confer with UNESCO officials in Paris re their proposed program in Fundamental Education in the Arab States. She will also participate in the triennial meeting of the Associated Country Women of the World in Denmark, September 9 - 16.

FAO ACTIVITIES

FAO's Director-General visits

Continuing his visits to the main regions of the world for a first-hand look at prevailing conditions and for consultations with Government officials on programmes of agricultural development, FAO Director General, Norris E. Dodd, left Washington on 15 January 1950 for an extensive trip which will include Latin America, the Near East and possibly FAO member-countries in Africa.

Following his tour, Mr Dodd will attend the 9th Meeting of the FAO Council (World Food Council), scheduled to be held in Rome during the second week in May. His observations concerning the areas visited will then be reported to the Council members.

In January 1949, Mr Dodd visited several European countries — the United Kingdom, Portugal, Italy and Greece — and then went to Turkey and to several countries in the Near and Far East. He returned from this trip of several months with the strong conviction that much can be done to improve food production in the under-developed areas of the world by substituting simple tools of better design and simple improvements in farming for many practices now widely used. This approach to agricultural advancement was stressed in plans, approved by the recent session of the FAO Annual Conference, for FAO participation in an expanded programme of technical assistance for economic development of under-developed areas.

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A new member of the Regional Office in Rome is Dr R.A. Silow who joined the Agriculture Division. He will work in connection with the European Committee on Agricultural Technology as well as with other agricultural work. Dr Silow recently completed an extensive assignment in China on behalf of the British Council and before that, he was actively engaged in plant breeding work in the West Indies and the United States.

FAO Staff Visits

Following a recommendation of the Fourth FAO Annual Conference, FAO Staff Visits to ten European member countries were undertaken in the first half of 1949, for the purpose of establishing better coordination between FAO's work and the national programmes.* The results of these visits were commended by the Fifth Annual Conference on November-December 1949, which suggested their continuation to other countries, in 1950.

Accordingly, in February-March 1950, Mr A.H. Boerma, Regional Representative for Europe of the Director-General of FAO, accompanied by several experts from both FAO's European Regional Office in Rome and Sub-Office in Geneva, visited Ireland, Denmark, Norway, Sweden and Finland.

The FAO group was received in each country by the Minister of Agriculture and discussed with the FAO National Committee all problems relating to Economics, Statistics, Distribution, Nutrition, Agriculture, Rural Welfare, Forestry, Fisheries and Information. The representatives of national Farmers' Unions, Cooperatives, Landworkers' Unions, Young Farmers' and Women's Associations, Agricultural Societies, Colleges, Research Institutes, Experiment Stations, Extension Services, School-feeding Organizations, Press Film and Radio were also contacted.

The reports submitted by the FAO group both to the National Committees of the countries visited and to FAO Headquarters will contribute to intensifying the development of FAO activities in the direction desired by the countries. The thorough preparation for and documentation of the meetings held, undertaken by the Chairman and members of the National Committee made it possible in each country to complete the necessary talks in four working days. The group also had the opportunity to see something of each country's achievements and famous institutes, such as the Agricultural College in Norway, Royal Agricultural College at Ultuna, Sweden, and Dr A.I. Virtanen's Institute of Research in Helsinki.

In every country visited, Mr Boerma gave a Press Conference and made a statement over the local radio; in Denmark, he gave a lecture on FAO's work and aims at the Royal Veterinary and Agricultural College, Copenhagen.

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Mr L.R. Ray, FAO official has visited Egypt, Ethiopia, Lebanon, Syria and Irak in order to make a survey of the methods now in use for processing agricultural products and to advise on improvements in these methods and the preservation of fruits and vegetables as well as other commodities. This visit has aroused great interest among the countries visited.

Dr K.V.L. Kesteven of the Agriculture Division of FAO has returned from Kabul where he has assisted the Afghanistan Government in the production of rinderpest vaccine. He demonstrated to the Afghanistan veterinarians the method for producing the lapinized rinderpest vaccine.

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In March 1950, Mr Alfredo Sacco, FAO agricultural economist began a four-month field assignment to Mexico, Colombia, Venezuela, Brazil, Chile, Uruguay, Puerto Rico and Cuba. His purpose is to consult with government officials about establishing national targets and programs for 1952 53 food production, consumption and trade ; and to exchange views on current programs for economic development.

FAO will presently send other agricultural economists to help governments in other regions to develop similar aims and programs for food and agriculture.

FAO Forestry Mission to Austria

Two FAO technicians, Dr Egon Glesinger, Deputy Director of FAO's Forestry and Forest Products Division, and Mr D. Roy Cameron, Chief of the Forestry Branch of the European Office of FAO, undertook a special survey on the forestry situation in Austria during January and February 1950.

Austria, a member-nation, has asked FAO to study and report on a long-term forestry development programme to form part of her general agricultural and industrial programme.

Before the war, Austria ranked as a major European exporter of lumber, pulp and other forest products. Systematic development of her greatest economic asset, with a view to sustained production and exports, will influence not only her long-term position but also her present balance of payments difficulties.

FAO Council meets in Rome

Looking toward establishment of FAO permanent headquarters in Rome sometime in the first half of 1951, the 18-government Council of the Food and Agriculture Organization will hold its ninth session in that city beginning 8 May 1950.

Viscount Bruce of Melbourne, Independent Chairman of the Council, will preside over a session expected to last about 10 days. FAO Director-General N.E. Dodd, who at that time will be concluding an official trip including visits to member countries in Latin America, Africa, and parts of the Near East and Europe, will attend the Council session and will

report the results of his visits. Sir Herbert Broadley, Deputy Director-General, will go to Rome from Washington, accompanied by key members of the staff.

Consideration of plans for the removal of headquarters to Rome, as directed by the 1949 FAO Conference, will hold an important place on the agenda, along with the question of the time and place of the next session of the Conference of FAO's 63 member countries.

The Council will receive a report on preparations for the move, including the progress of negotiations with the Italian Government, and the technical, legal and financial implications of the transfer.

The Council will also consider the question of regional meetings with reference to the date of the next Conference.

The Council will receive a report from the FAO Committee on Commodity Problems on its initial activities, its plans, and the procedures under which it proposes to work.

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In cooperation with the British Council a **meeting on dairy processing** is to be held at Reading, England during July of this year. An opportunity will be provided for European countries to study new developments in the dairy field in Great Britain and to discuss developments in their own countries.

The 2nd Meeting of the European Committee on Agricultural Technology

The 2nd Meeting of the European Committee on Agricultural Technology was held in Geneva from 27-30 March, and was attended by representatives of Austria, Belgium, Denmark, Finland, France, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Sweden, Switzerland, United Kingdom, Yugoslavia. Observers were sent by CEA (European Federation of Agriculture), ECA, ECE, the Holy See, ILO, IFAP (International Federation of Agricultural Producers), OEEC and WHO.

Sir Ralph Enfield of the United Kingdom was unanimously elected Chairman, Mr K. H. Olsson (Sweden), Vice-Chairman, whilst Dr R. A. Silow and Dr I. Moskovits (FAO) were nominated secretaries for the meeting.

Mr A. H. Boerma, Regional Representative of FAO for Europe, in his opening address, stressed the importance of the Committee, pointed out that all details concerning the work in agricultural technology carried out by FAO in Europe, and even all available information on related activities of other organizations, are submitted to the Committee, emphasized that the Committee was called into life to deal with the policy of agricultural technique but not to discuss in detail technical problems themselves. A great number of papers were prepared for this meeting, on the one hand, informative, and on the other hand, for action.

The Meeting gave much consideration to the various organizations working in the field of Agricultural Technology in Europe and made recommendations which it is hoped will lead to more effective coordination of their work.

With regard to coordination of agricultural research, it was pointed out that the facilities and the personnel necessary to carry on research in Europe are too limited to meet demands and it is therefore most important that the existing facilities and personnel are used efficiently. This will only be possible if unnecessary duplication is avoided and if the work is organized in such a way that the efforts of the various investigators and the laboratories supplement each other, thus contributing to the solution of common problems.

The Meeting recommended that FAO should convene a meeting to discuss problems of organization and administration concerning agricultural research, to which persons responsible for policy aspects of agricultural research coordination would be invited. The exchange of information on research in agriculture is necessary in order to keep research workers well informed regarding new developments, and, with a view to facilitating their work, the Committee also recommended that FAO should compile lists of Research Organizations working in the various fields of interest to FAO.

In the field of Technical Assistance for Economic Development, the Committee felt that the important contributions from European countries will be found in the supply of technical personnel for service in under-developed countries and the provision of training facilities for young farmers, students and advanced technicians. Interest was also expressed in the possibilities of bilateral exchange of technicians.

With regard to Extension Services, the OEEC survey now being carried out in collaboration with FAO will be concluded in May and the findings will be made known to OEEC member governments. On the basis of this report and following the recommendation made by the FAO Meeting of Experts on Extension Service in August 1949 (The Hague-Brussels), FAO will then carry out an enquiry on national action in the field of extension work.

The Committee, as stated in our chapter 'Agriculture' of this bulletin, noted with satisfaction the work being carried out by FAO in cooperation with European countries in the Hybrid Maize Trials and approved the recommendations made at the Hybrid Maize Meeting convened by FAO in Rome, 30 January-3 February 1950.

Proposals for the Revision of the Phylloxera Convention signed in Berne, 1881 *and of the Plant Protection Convention signed in Rome*, 1929.

This Committee stressed the necessity for modification of the two above-mentioned conventions at

its first meeting in Rome in September 1949 ; and, at the Annual Conference of FAO (5th Session) in November last, a resolution was passed calling for their revision. It was further decided at that time that FAO organize a meeting in conjunction with the Conference on Plant Quarantine Regulations which was held at the Hague on 26 April of this year.

As most countries have developed the reconstruction of their vineyards on the basis of resistant American grafting stocks, the Phylloxera Convention of 1881 is now out of date. It was felt that Governments may agree to withdraw from the Convention and will be willing to include any of its stipulations which should be retained, in a revision of the Plant Protection Convention.

Matters relevant to revision of the Plant Protection Convention, especially the simplification and unification of regulations and certification procedure in the field of plant quarantine, and the organization of a reporting service for plant pests and diseases, were considered at the Hague Meeting.

Meeting of Governmental representatives for the coordination of activities in the field of plant disease and infestation control.

The Meeting approved steps which have been taken and which will lead to the establishment of a European Organization for Plant Protection. The Constitution of this Organization was discussed at the Conference on Plant Quarantine Regulations in the Hague on 26 April of this year.

Again at its first meeting in Rome in September 1949, the European Committee on Agricultural Technology emphasized the necessity for close coordination in the field of plant protection, particularly in view of the international character of many plant pests and diseases. It was decided that the most appropriate organization for this purpose seemed to be the International (European) Committee for Control of the Colorado Beetle. At the Florence Conference for Control of the Colorado Beetle in January 1950, FAO stated its intention for revision of the International Plant Protection Convention signed in Rome 1929 and for the establishment of an international reporting service for plant pests and diseases. The proposals embraced world-wide action, and regional organizations would be asked to take action in their particular regions in order to deal with pests and diseases of importance to their areas. The Florence Conference then unanimously recommended that the Colorado Beetle Committee should extend its service to cover the control of plant pests and diseases of significance in general in the European area, and a draft Constitution for the establishment of a ' European Plant Protection Organization ', based on the Colorado Beetle Committee, was discussed at a special meeting of European delegates at the Conference on Plant Quarantine Regulations in the Hague at the end of April.

International Convention for the trade of semen.

The Committee unanimously adopted draft regulations drawn up at a meeting of experts called by FAO in Rome this year and asked FAO as a matter of urgency, to investigate the possibility of negotiating a convention, and to induce governments to incorporate in their national legislation the regulations embodied in the proposed draft, even before a convention is concluded.

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The Committee noted that there is contact between FAO and the International Office of Epizootics with reference to the centralization and dissemination of information on animal diseases.

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A further recommendation requested FAO to convene a meeting of representatives of organizations responsible for *milk-butterfat testing* and *recording*, who are willing to adopt a definite Agreement, the basis of which was worked out in Paris, October last, at the meeting of the European Association for Animal Production. The Committee unamimously adopted the draft of the Agreement proposed.

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It was also proposed that FAO call a meeting of experts to study the possibility of standardization of *pig-testing* on a European scale. FAO was asked to carry out, in collaboration with the European Association for Animal Production, an enquiry on the Herdbook Organizations, in Europe and in particular on the methods of keeping and operating herdbooks at present used in Europe.

The Committee approved the FAO proposal to convene a meeting of European experts in *land* and *water utilization* and *conservation* in Amsterdam, in July of this year, prior to the 4th International Congress of Soil Science in Amsterdam in August 1950.

With regard to *farm machinery*, FAO has just compiled a directory of agricultural engineering institutes and a survey on the farm machinery in Europe — both have been approved by the Committee.

Problems of Livestock Feeding.

The Committee asked for priority on these points :

1. A meeting of experts should be convened to consider the technical problems involved in the conservation of feedstuffs and the latest developments in this field.

2. Additional information on the situation with regard to feedingstuffs and on existing feeding prac-

tices in Europe should be collected on a uniform basis, possibly in cooperation with other international organizations in Europe and,

3. Information should be collected on legislative and other measures in force in European countries with reference to the manufacture of and trade in compound feeds, and on the experience gained under such regulations. The data obtained should be made available to all European governments by whom it might be used as a basis for mutual consultation, should the necessity arise.

On the basis of statements made and reports submitted, the Committee took note of the following subjects without making further comment :

1. UNICEF/FAO Milk Conservation Project (Document FAO 50.2/875 Agr.).

2. Meeting of experts on the improvement of milk production and marketing to be held at Reading (United Kingdom), July 9-27, 1950.

3. Meeting of experts on weedkillers (Document FAO 50.2/883 Agr.).

4. Meeting on problems of mountainous areas (Document FAO 50.2/884 Agr.).

5. Cyprus meeting concerning problems of agricultural production and reafforestation in the Mediterranean area. (Document FAO 50.2/885 Agr.).

The Committee decided that its next meeting should be held in approximately six months, the exact date and place to be decided by the European Regional Representative.

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Seeds of 36 maize hybrids which have been grown successfully in the U.S. are on the way to India for experimental planting in many parts of the country. The seed is provided at the request of the Government of India which is placing considerable emphasis on increased maize production in connection with the broad Indian programme for developing self-sufficiency in the production of basic foods.

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Advisory assistance was given to **Guatemala** during July and August 1949 on problems of cattle production and range management and was continued during March 1950 by FAO. Previous work was done during the rainy season and the projected visit made it possible to examine conditions during the dry season and help in making plans for introductory seedings of forage plants at the beginning of the next rainy season.

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At FAO Headquarters in Washington a **Meeting of cooperative specialists** was held to advise on the exchange of cooperative officials between the United Kingdom and the United States and to consider proposals for studies and other activities in relation to cooperatives. Specialists in Home Economics discussed programmes for the development in this field.

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The Ceylonese Government has requested FAO to make available the services of the Regional and Assistant Regional Fisheries Officers for Asia and the Far East in order to help start a programme for fisheries development. This programme, which was drawn up with the assistance of Dr G.L. Kesteven includes the re-organization and expansion of government fisheries services, fisheries research, the extension of fishing activities to offshore waters and the training of fishermen.

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The FAO **Statistical training schools** (see this *Bulletin* N° 3, 1949, p. 187) in Paris and Cairo have completed their work. A total of 30 students from 5 countries participated in Cairo and 40 students from 10 countries participated in Paris. A further Training Centre in New Delhi has completed its work. Fifty-two students from 9 countries participated in the latter training program which included classroom and laboratory work as well as participation in an experimental field enumeration. The school was conducted cooperatively by the Statistical Office of the United Nations, the Government of India, and FAO was represented by Mr C.P.G.J. Smit.

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A meeting of the joint Bibliography Committee of FAO and the International Union of Forest Research Organizations was held at Oxford University in January at the invitation of the Executive Secretary of the Commonwealth Agricultural Bureaux. The purpose of the meeting was to study the various suggested amendments sent in from all over the world to the new ' Oxford ' classification system for forestry literature.

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A poplar study mission composed of experts from the U.K., France, Italy, Belgium and Germany is to visit the U.S.A. ECE, OEEC and the International Poplar Commission and FAO are engaged in negotiations.

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The FAO Far Eastern Regional Office convened a technical meeting on Timber Grading held at Dalat in Indochina, 3-8 April, 1950. Timber Terminology, Testing Methods and Dimensions were also included in the agenda for discussion.

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The **Rice Breeders' Working Party** held its first meeting in Rangoon on 1-4 February. Thirteen technical workers from Burma, Ceylon, India, Indochina, Indonesia, Malaya, Japan, Thailand and the United States participated. K. Ramiah of India was elected Chairman. L.E. Kirk served as technical secretary of the meeting, and C.W. Chang also participated on behalf of the Division. Ralph W. Phillips attended the last two sessions. After full discussions, the Working Party unanimously agreed to place the following recommendations before the International Rice Commission, including: free exchange of seed for experimental purposes between countries; further development of the world rice catalogue; establishment of centres in India, Indonesia, and Japan for maintenance of genetic stocks; collection and testing of indigenous rices, including wild forms; comprehensive hybridization of Indica and Japonica varieties at cooperating stations in all participating countries; provision for technical training courses in rice breeding; and development of sound national programs for production and distribution of improved seeds. It was also recommended that the Working Party be continued as an active organization for rice breeding in the member countries of the International Rice Commission. The advance copy of the Rice Genetics catalogue was very enthusiastically received.

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The second session of the **International Rice Commission** opened in Rangoon on 6 February with delegates or observers in attendance from Australia, Burma, Ceylon, France, India, Indonesia, Italy, Korea, Netherlands, Pakistan, Philippine Republic, Portugal, Thailand, United Kingdom, United States, SCAP, ECAFE, WHO and UNESCO. The meeting was opened by addresses by the Chairman (Prince Sithiporn Kridakara of Thailand), the Burmese Minister of Agriculture and Forestry, and a message from the Director General of FAO, followed by statements by heads of delegations. At the second plenary session reports were read from the Nutrition Committee for South and East Asia on the Nutritional Aspects of Rice, the Rice Breeders Working Party, and the Executive Secretary of the Commission on activities during the past year. This was followed by a statement by Doctor Ralph W. Phillips, Assistant Director, Agriculture Division of FAO concerning plans for future work of the Commission, after which two committees were formed to deal with (1) Production, storage and processing, and (2) Statistics, terminology and internal distribution.

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The Hashemite Kingdom of the Jordan applied for FAO membership in a note of 21 December 1949. The application will be placed on the agenda of the next session of the FAO Conference.

PUBLICATIONS

The 138-page publication **'State of Food and Agriculture - Survey of World Conditions and Prospects, 1949'**, which was used as a working paper by the Fifth Annual Conference of FAO in November-December 1949, is available at the price of 1.50 U.S. dollars at FAO sales agents or at the FAO Documents Sales Service, Food and Agriculture Organization, 1201 Connecticut Avenue, Northwest, Washington 6, D.C..

The publication follows the pattern of the Annual Reports of FAO's Director-General, and focuses attention on the need for technical assistance to underdeveloped countries and areas, in accordance with the principles established by the Economic and Social Council of the UN. The second basic issue it emphasizes is the intricate problem of trade in agricultural products. It illustrates, with the help of 75 statistical tables, the world situation, production, international trade, prices, consumption and nutritional levels, and gives the prospects for 1950-51. Appendices give surveys of agricultural products (foods and fibres), fisheries and forestry products and agricultural requisites.

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The Agriculture Division of FAO has decided to issue a new series of publications in order to make available quickly and in an inexpensive form papers related to agriculture development. These will include papers on basic problems that must be solved in bringing about improvements in various branches of agriculture and selected reports of specialists who have examined specific agriculture problems at the request of member countries of FAO, particularly those of value to countries other than the ones upon which the reports are based. They are not intended as exhaustive technical studies such as are now included in the agriculture studies series. The first paper of the new series **'Fertilizer Manufacturing Projects'** — their planning and financing, has just being published. The 19-page publication which is primarily intended for the use of agriculture readers in relatively under-developed countries and areas, informs on the planning and basic requirements for a fertilizer enterprise, management, financing and necessary precautions to be taken in planning such enterprise.

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The first two publications of FAO World Catalogue of Genetics Stocks have been published:

1. The **FAO World Catalogue of Genetic Stocks 1. WHEAT**, comprising tabulations of the characteristics of the first 286 genetic stocks of wheat.

The catalogue consists of 4 parts : (*a*) the tabulation of characteristics ; (*b*) key to the genetic stock numbers ; (*c*) alphabetic list of the stocks described, and (*d*) the list of participating countries and stations indicating the genetic stocks maintained by each station.

2. The **World Catalogue of Genetic Stocks. 2. Rice.** This publication, comprising tabulation of 322 Genetic Stocks of rice, is divided in the same way as the preceding catalogue on wheat.

Supplements will be issued from time to time as further data are received from contributors. At present data are being collected on tropical and sub-tropical forage plants. In this connection it should be noted that the Hybrid Maize Meeting convened by FAO in Rome from 31 January to 3 February 1950 recommended that 'FAO immediately undertake the preparation of a catalogue of Breeding Stocks of Maize within the framework of the FAO World Catalogue of Genetic Stocks'.

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Some important animal diseases in Europe. FAO Agricultural Studies N° 10, edited by K.V.L. Kesteven, résumés in French, tables, laboratory procedures, 196 pp., $ 2.00.

The papers published in this book were presented at the Animal Diseases Meeting in Warsaw, Poland, in November 1948. The demand for copies of the more important papers has made it necessary to print an edition for general distribution.

The diseases treated are swine erysipelas, Teschen disease of pigs, swine fever (hog cholera), bovine tuberculosis, brucellosis (Bang's disease), bovine mastitis, Newcastle disease, and dourine. Contributors include Alfred Trawinski, Director of the National Veterinary Institute, Pulawy, Poland (Swine erysipelas), V. Dolecek, Chief of Veterinary Services, Prague, Czechoslovakia (Teschen disease), Martin M. Kaplan, Public Health Officer (Veterinary) WHO Geneva, and David R. Meranze, Pathologist and Director of Laboratories, Mt. Sinai Hospital, Philadelphia USA, (Teschen disease), T. Dalling, Chief Veterinary Officer, Ministry of Agriculture and Fisheries, London, England (Swine fever and bovine tuberculosis), A.W. Stableforth, Deputy Director, Weybridge Veterinary Laboratory, England (Brucellosis and bovine mastitis) and Stanislaus Krauss, Head of the Veterinary Department, Ministry of Agriculture, Poland (Dourine). Martin M. Kaplan also contributed a paper on Newcastle disease. Laboratory procedures were demonstrated at the meeting and the technical details are given after each paper. The original title of the Kaplan-Meranze paper on Teschen disease was *Porcine Virus Encephalomyelitis and its Possible Biological Relationship to Human Poliomyelitis* and it was published in its entirety in the *Journal of Veterinary Medicine*, Vol. XLIII, 8, Chicago, August 1948. The parts of this paper relevant to the meeting were read by Martin M. Kaplan.

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On 10 February 1950, FAO published a '**Commodity Report on Sugar**' (31 pages, 7 statistical tables in the text, 4 in the Annex, price 25 U.S. cents). It is hoped that two more reviews on sugar will be issued during 1950 — one in June and one in November. The report — based on data compiled by the International Sugar Council and by sugar authorities throughout the wolrd — shows that supplies and consumption requirements will reach a rough balance during the 1949-50 sugar year. World production, exclusive of the U.S.S.R., is likely to amount to 31.5 million metric tons as compared with 31.9 million metric tons in 1948-49 (all figures give raw value). No burdensome surplus is expected to emerge during the current sugar year. Data on production in the main producer countries are given and statistics illustrate the international sugar trade. The Report also includes a note on long-term trends, in relation to a potential international sugar agreement.

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Another '**Commodity Report on Wool**' was issued by FAO on 13 March 1950 (24 pages, - 8 statistical tables in the text, 4 in the Annex, price 25 U.S. cents). It shows, following sterling devaluation, wool prices in London and Dominions markets rose sharply and despite a slight decrease in February 1950, their level was from 40-50 % above pre-devaluation. Although high prices of raw wool may act as a break to consumption, it is estimated the consumption of apparel wool will exceed production by about one-fifth in 1950, should consumption throughout the year continue at approximately the rate estimated for the second half of 1949. The report gives information on production, export, import and consumption of raw wool.

Both these reports can be bought from FAO sales agents, in local currencies. It is expected that reports on hard fibres and jute will appear in 1950.

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Four papers submitted to the **Technical Meeting on Agricultural Extension** held at Turrialba, Costa Rica, 23 August-2 September 1949 have been published by FAO and the Inter-American Institute of Agricultural Sciences in a 51-page pamphlet under the title ' Educational Approach to Rural Welfare '. The reports deal with the following questions : The Rural School in Guatemala in Relation to Agricultural Extension, by E.M. Maes ; The Rural Centre Approach to Rural Betterment, by Dr D. Spencer Hatch ; Social Welfare Developments in Jamaica and the Jamaica Social Welfare Commission, by D.T.M. Girvan ; The Antigonish Movement in the Maritime Provinces of Canada, by the Extension Department, St. Francis Xavier University.

The developments reported on in summary form in this volume have been selected as significant experiments in rural education which may provide suggestions and guidance to other countries in their educational programs.

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World fisheries abstracts, Vol. I, N° 1· (Single copies 75 cents ; annual subscription $ 4.00). FAO has just published the first issue of *World Fisheries Abstracts*, a bimonthly issued in English, French, and Spanish editions and containing abstracts of technical articles from periodicals and serial publications, published laboratory reports, government bulletins, and other publications containing information of importance to the fishing industry.

World Fisheries Abstracts covers the field of fisheries technology : processing methods, boat design, fishing methods, chemical examination of fishery products, etc. It does not cover publications of a more scientific nature which are generally found extracted elsewhere.

The information reprinted in the Abstracts is extracted from about 130 different publications originating in about 25 different countries. From these sources the most pertinent articles are abstracted in such a way that the subscriber will find in a condensed form as great a part as possible of the information contained in the article. At the same time complete references will be given in order that subscribers may be able to secure the original article when desired.

World Fisheries Abstracts will thus serve to give up-to-date information on the developments of fisheries technology. However, subscribers will also wish to be able to refer at any time to such information when specific questions come up. The abstracts are therefore published in such a form that they may be cut out and filed according to one of the three filing systems for which they are coded, and the publication is accompanied by a Handbook (168 pages, 75 cents, free to subscribers), which gives the various subjects related to fisheries technology, arranged alphabetically. The Handbook, for each subject, will refer the use to the code or subject heading. The information desired will then easily be found directly in the files which therefore will serve as an encyclopedia of fisheries technology, constantly kept up to date.

The Handbook also gives a complete list of the publications covered by World Fisheries Abstracts and the various classification systems. Both of these features may prove useful for other purposes than for filing of abstracts.

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The Report of the Third Session of the **International Poplar Commission** and the papers of the Third International Poplar Congress were published by FAO in March 1950. The resulting 112-page publication contains, in addition to the General Report of the Commission, five appendices, comprising various reports submitted to the Commission and special reports, on Poplar identification and Culture in the Netherlands, by Messrs G. Houtzagers and A. Herbignat ; Poplar Diseases and Insect Pests in the Netherlands and in Belgium, by Mr T.R. Peace; Technical and Cultural Tests with a view to developing a Research Programme for the Improvement on Work Quality and Increase of Industrial Yields by Messrs G. Meunier Fourgue and Nordvik.

The papers of the Third International Congress include a list of its participants ; the itinerary and programme of the study trip undertaken by the Commission ; a list of the reports submitted and the sources where they can be obtained.

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The proceedings of the **First Conference on Mechanical Wood Technology** held in Geneva 29 August to 3 February 1949 have been published in a 77-page publication containing, in addition to the record of discussions and resolutions, the reports submitted to the Conference on Timber Testing (by K.L. Cooper), Tension Tests Parallel to Grain (by H. Kühne), Studies assigned to the U.S. Forest Products Laboratory (by L.J. Markwardt), Group-2 Tests (by J.L. Bienfait), Measuring Properties and Defects in Sawn Timber (by F.E. Sümes).

Thes publication is available both in English and French.

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'Social Welfare in Rural Communities' is the title of a 20-page pamphlet issued by FAO, and prepared as a basis for discussion at a Seminar on Social Welfare activities organized by the UN Division of Social Activities at Beirut, 15 August to 8 September 1949. It attempts to give a general analysis of the problems of settled rural communities ; references are made to significant developments in many countries which may provide suggestions for countries at similar stages of development and faced with similar problems.

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It will be remembered that the **Classified Catalogue** of the Library of the former International Institute of Agriculture was published under the auspices of the FAO European Regional Office in 1948 in a bilingual English-French edition. The books and series which have since been added to the Library are contained in two bi-lingual supplements, the second of which was issued recently.

Film news from member countries

We should like to draw the attention of our readers to the following two Portuguese films :

' Learn To Eat ', 35 mm, black and white, sound track, two reels.

' Portuguese Wine ', 35 mm. black and white, sound track, three reels.

We publish the above item on a purely informative basis as we think our readers are interested to know what films are available and in which countries. This, however, does not necessarily mean that FAO is sponsoring these films or that it is in a position to make prints available. In most cases the FAO National Committees are able to give further information if this is desired.

Editor's Note

In our last number we published a review about the Commodity Series Bulletin N° 15 ' Animal Feedstuffs '. This was prepared by Mr Henning Normann of FAO's Distribution Division.

Erratum

Correction of error in N° 4, 1949, p. 311,

'*Experts on Nutrition meet under WHO-FAO auspices*'.

FAO members :

Professor M.J.L. Dols (Netherlands), Professor of Biochemistry, Free University, Amsterdam

should read

FAO members :

Professor M.J.L. Dols (Netherlands), Professor in the Science of Nutrition, University, Amsterdam ; and State Adviser on Nutrition, Ministry of Agriculture, Fisheries and Food, The Hague.

U N O

Agricultural problems

The ECE Committee on Agricultural Problems concluded a six-day session in Geneva on 25 March 1950. Delegations from nineteen countries (Belgium, Bulgaria, Czechoslovakia, Denmark, Finland, France, Hungary, Italy, Netherlands, Norway, Poland, Rumania, Switzerland, Sweden, Turkey, United Kingdom, United States of America, Union of Soviet Socialist Republics, Yugoslavia), as well as representatives of FAO, the International Labour Organization and the International Federation of Agricultural Producers, participated in this session.

The agenda called for the Committees consideration of : (*a*) Secretariat documents on five subjects to which the Committee had assigned priority *i.e.* livestock production and animal feedingstuffs ; means of production; assistance to small and medium farmers, quality standards for perishable foodstuffs ; bread grains ; and (*b*) concrete recommendations on further action to be taken on these and other subjects.

The Committee agreed unanimously on procedure to be followed with regard to a Secretariat study on assistance to small and medium farmers. This study had been requested by the Committee at its first session held in October 1949. Agreement was also reached on Secretariat procedure in dealing with problems raised by governments on matters of agricultural technique. *

The Secretariat will upon request make available information on scientific bodies able to furnish data on technical problems of specific interest to governments.

The Secretariat was invited to study the relation between prices of coarse grains and main livestock products (milk, pig meat and eggs), and the relation between prices of different types of fertilizers and the principal vegetable products.

The Committee agreed that the development of intra-European trade in agricultural products and in means of agricultural production, such as farm machinery and fertilizers, was in the interest of European agricultural recovery. Nevertheless at this stage the Committee was unable to reach agreement on the extent to which it should concern itself with the export and import of agricultural commodities.

The Committee was also unable to reach agreement on the question as to whether the data to be used by the Secretariat should be limited to published official information or whether, in addition, governments should undertake to reply to enquiries from the Secretariat and provide supplementary information. In the view of the majority of governments represented on the Committee such supplementary information is needed for purposes of international comparison.

The discussion during the session was general rather than devoted to an intensive examination of the various documents prepared for the Committee by the Secretariat, the latter was invited to send these documents to member-governments, as well as the detailed information from which they were drawn. The governments were asked to complete and correct the basic reports and documents, where necessary, within two months.

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* The Secretariat will upon request make available information on scientific bodies able to fu nish data on technical problems of specific interest to governments.

NEWS IN GENERAL

European Confederation of Agriculture

The Steering Committee of the European Confederation of Agriculture met in Brugg on 7 and 8 February last. It was decided that the next General Assembly would be held in Strasburg from 23 to 26 August 1950.

One of the principal items on the agenda of this General Assembly will be the position of agriculture in regard to the economic collaboration of the European States and the establishment of the United States of Europe.

International Agricultural Engineering Commission

The International Agicultural Engineering Commission met in Paris from 6 to 8 March last. The delegates of Belgium, France, Italy, Luxembourg, Netherlands, Spain, Switzerland and the United Kingdom appointed Mr Passerini (Italy) as Chairman of the Commission in place of the resigning officer Mr Bouckaert, who was nominated honorary founder chairman,

The reports submitted to the meeting included : 'Study of the flow of water in drain pipes' by Mr Sin (Belgium) ; 'Drain excavators' by Mr Lalloy (France); 'Study of a new porosimetre' by Mr Bourrier (France) ; 'Drainage and irrigation works in the lower valley of the Rhône' by Arrighi de Casanova (France) ; 'Result of an international survey on rural housing', Mr Ingham (United Kingdom) ; 'Arrangement of buildings with a view to saving labour'Mr Govin (France) ; 'Technical results obtained with pneumatic tyres for tractors', Mr Bourdelle (France) ; 'From typization to organization of work in agriculture', Mr Bricot (Belgium) ; 'Prevention of injuries to workers', Mr Ragondet (Belgium) ; 'French achievements in the scientific organization of agricultural work and agricultural technical research centres', Mr Breton.

The Commission resolved to organize a Congress to be held in Italy in 1951.

Public Affairs Institute of U.S.A.

The Public Affairs Institute of U.S.A. is preparing a ' Bold New Program Series ' of publications with a view to acquainting public opinion with the problems of technical assistance to underdeveloped countries through the United Nations and specialized agencies. Following are the titles of eight pamphlets available after March 1950 :

A Policy and Program for Success ; Two-thirds of the World ; Groundwork for Action ; Engineers of World Plenty ; People, Food, Machines ; Helping People Help Themselves ; Foreign Aid and our Economy ; Where is the Money coming from. Price of the set is 2.50 U.S. dollars with a discount on quantity orders of individual studies. Orders may be sent direct to the Public Affairs Institute, 312 Pennsylvania Avenue, S.E., Washington 3, D.C.

CONFERENCES
CONGRESSES - MEETINGS
1 9 5 0

APRIL

15 to 25 and 27 to May 6
Cyprus, Meeting on Soil conservation, Range management, Forestry and related problems (FAO)

17
Cronulla, Indo-Pacific Fisheries Council
Australia

17 to 27
Geneva, ILO Committee of Experts on Indigenous Labour

17 to 28
Lake Success, UN ECOSOC Subcommission of the Economic and Employment Commission

17 to 28
Costa Rica, Latin-American Meeting on Control of Infestation of Stored Products

18 to 25
Geneva, International Poplar Commission

23
Rio de Janeiro, Inter-American Council of Commerce and Production — 5th Plenary Meeting

26 to May 3
The Hague, International Meeting in cooperation with Netherlands Government to consider desirability of Modifying the Phylloxera Convention at Berne 1881, and the Plant Protection Convention of the International Institute of Agriculture (IIA) at Rome, 1929

Suva, South Pacific Conference — 1st Session

MAY

1 to 6
Paris, Committee of 6 Nations, FAO and OIE to consider international organization to deal with reporting and control of livestock diseases.

2
Brussels, Rubber Study Group — 7th Session

3 to 7
Stockholm, International Council for the Woodworking and Forestry Industries

8 to 18
Rome, FAO Council — 9th Session

8
Geneva, WHO Third World Health Assembly

8
Washington, Congress of the International Seed Testing Association

8 to 13
Algiers, Mediterranean Subcommission, European Forestry and Forest Products Commission

8 to 19
Lake Success, UN ECOSOC Commission on the Status of Women, 4th Session

15 to 19
Paris, Meeting on Foot - and - Mouth Disease (in cooperation with OIE)

22
Washington, International Cotton Advisory Committee

29 - June 8
Saltsjobaden, (Sweden) International Federation of Agricultural Producers, 4th Annual General Meeting

29 - June 10
Geneva, UN Economic Commission for Europe - 5th Session

29 - June 15
Montevideo, UN Economic Commission for Latin America - 3rd Session

Florence, UNESCO General Conference - 5th Session
Lake Success, UN Economic Commission for Asia and the Far East

JUNE

5 to 13
Rio de Janeiro, Nutrition Conference on Problems in Latin America - 2nd Session

7 - July 1
Geneva, ILO - 33rd International Labour Conference

13-16
Venice, Conference of the International Association of Seed Crushers.

Fairs and Exhibitions *

APRIL

12 to 30
Milan, International Fair

15 to 24
Lyons, International Fair

15 to 25
Basle, International Sample Fair

22 to May 1
Ghent, Flowers Exhibition

22 to May 6
Friedrichshafen, International Fair and Exhibition

29 to May 8
Avignon, International Fair and Wines Exhibition

29 to May 8
Rennes, International Fair and Poultry Show

29 to May 14
Brussels, International Fair

29 to May 14
Poznan, International Trade Fair

29 to May 14
Liége, International Fair

30 to May 14
Mannheim, Agricultural Exhibition

MAY

2 to 6
Dublin, Fair of Irish industries

3 to 14
Hanover, International Fair

9 to 24
Valencia (Spain), International Sample Fair

14 to 28
Prague, International Fair

15
Berlin, Flowers Exhibition

13 to 29
Paris, International Fair

21 to 29
Goteborg, International Fair

29 to June 9
Toronto, Third Canadian International Fair

JUNE

2 to 18
Namur, International Fair of the Walloons

4 to 19
Padua, International Fair

10 to 25
Lille, International Fair

10 to 30
Barcelona, International Fair

11 to 26
Bordeaux, International Fair.

* It is to be noted that the dates of Fairs and Exhibitions are liable to changes. (Editor)

LEGISLATIVE NEWS

SUMMARY : I. FOODSTUFFS (France). — II. AGRICULTURE : (*a*) Hybrid maize (France) ; (*b*) Oil and fibre plant seeds (France); (*c*) Viticulture (France); (*d*) Phytosanitary control (France, Luxembourg); (*e*) Livestock sanitary regulations (Algeria, Belgium, Luxembourg). — III. ECONOMICS AND MARKETS : (*a*) Customs duties (Belgium, Egypt, France, Switzerland) ; (*b*) Wheat (Belgium) ; (*c*) Control of the trade in cattle and meat (France) ; (*d*) Price control and price fixing : (i) *rice and paddy* (France) ; (ii) *sugar* (France). — IV. STATISTICS (Algeria, Belgium, Switzerland). — V. FORESTRY (Belgium). — VI. FISHERIES (Algeria, Belgium, France, Portugal). — VII. RURAL WELFARE : (*a*) Domestic re-equipment aid (Belgium), (*b*) Accident insurance (Italy) ; (*c*) Agricultural cooperative societies (France).

I. - FOODSTUFFS

FRANCE

An Order of 18 January 1950, (*J. O.*, *N*° 23, 27 *January* 1950, *p.* 988), fixes the bolting grade for flour and products used in preparing edible pastes. The grade is fixed at ten points below the specific weight for hard wheat flour used in preparing edible pastes of fine quality ; at 3 points below for hard wheat flour used in preparing edible pastes of common quality, and at 5 points below the specific weight for the flours obtained from soft wheat used in preparing edible pastes of common quality.

II. - AGRICULTURE

(*a*) Hybrid maize

FRANCE

An Order of 10 February 1950 (*J. O.*, *N*° 44, 19 *February* 1950, *p.* 2005), exceptionally authorizes the marketing in 1950 of hybrid maize seed of the varieties entered on a list given under article 1 of the Order.

(*b*) Oil and fibre plant seeds

FRANCE

An Order of 17 March 1950 (*J. O.*, *N*° 73, 25 *March* 1950, *p.* 3319) issues measures relating to the marketing of oilseeds, linseed, hemp-seed and soybeans. It is forbidden to move for the purpose of selling, to put on sale, or to sell as seed oilseeds, linseed, hemp-seed or soybeans having a specific purity or germinative power inferior to the percentages stated in the Order. The seed of safflower, colza, mustard, rape, oil-poppy, sunflower and soya can only be marketed under the description of seed when accompanied by a certificate issued by the official inspectors appointed for this purpose.

All packages containing the seed of oleaginous or fibre plants moved in view of their sale as seed, must be in packets sealed with lead seals and provided on the outside with labels giving certain required particulars about the name and address of the seller, the name of the species and of the variety or of the type of variety to which the seeds belong, etc. Any imports of seeds of these same plants can only be made with the approval of the permanent technical committees for the selection of cultivated plants.

(*c*) Viticulture

FRANCE

A Decree N° 50-96 of 20 January 1950 (*J. O.*, *N*° 18, 21 *January* 1950, *p.* 771), provides for the organization of the viticultural season 1949-50, fixing the intervals for the deliveries of wine. To the extent in which the prices paid for wine on the farm fluctuate between 360 and 400 francs per degree hectolitre, that portion of the 1949 vintage which is still blocked will be set free, as from the 1st of February 1950, each two months in equal lots of 20 per cent. of the output of each producer, starting from a minimum of 100 hl. per consigner. Should the prices paid to the producer, ascertained on two consecutive markets, exceed 400 francs per degree hectolitre, the next lot will be freed immediately, and further lots will be freed from fortnight to fortnight until such time as the prices paid to producers again fall below 400 francs per degree hectolitre, when the lots still blocked will be set free each two months, starting from the date on which the last lot was freed. On the other hand, as soon as the prices paid to producers exceed 410 francs per degree hectolitre on two consecutive markets, the whole of the quantity held will be immediately freed.

For the purposes of the Decree the prices considered will be those ascertained on two consecutive

* Legislative Chronicle edited by the Legislation Service of FAO. For previous issues of the Legislative Chronicle see also 1 and 2 of 1947 ; 3, 4, 5, 6 and 7 of 1948 ; 2, 3, and 4 of 1949 of the European Bulletin of FAO.

markets days, at one of the following places : Nîmes, Montpellier, Béziers, Narbonne, on Perpignan, for ordinary red wine of 10°, of the usual consistency.

(*d*) **Phytosanitary control**

FRANCE

An Order of 29 December 1949 (*J. O.*, *N°* 9, 11 *January* 1950, *p.* 400) contains provisions on the importation of tubers and sets of dahlias from abroad. Importation into France from all countries of origin is subject to the presentation of a certificate of selection, control, and phytopathological inspection, delivered by the official services of the country of origin, certifying specifically that the imported dahlia tubers and sets come exclusively from controlled plantings and are free from virus diseases.

LUXEMBOURG

An Order of 2 March 1950 (*M. L.*, *N°* 16, 10 *March* 1950, *p.* 391), fixes the fees for phytopathological inspection for the delivery of certificates, copies of certificates, and other documents of the phytopathological service.

(*e*) **Livestock sanitary regulations**

ALGERIA

An Order of 28 December 1949 (*J. O. A.*, *Part I*, *N°* 1, 3 *January* 1950, *p.* 2), issued by the Governor General of Algeria, orders special measures to be taken in case rinderpest should appear on Algerian territory. When an order issued by the Prefect declares the existence of rinderpest, animals that have contracted the disease and those that have been infected are slaughtered by order of the Mayor, after consulting the Inspector of the district Animal Husbandry service. The animals are slaughtered on the spot ; their carcasses are buried or conveyed to a closed knacker's establishment. Compensation may be granted to the owners as a contribution to cover the losses caused by slaughtering the animals. The maximum compensation may not exceed 75% of the value of the slaughtered animals. The Governor General is empowered to order the compulsory vaccination of animals against rinderpest.

BELGIUM

An Order of the Regent of 25 January 1950 (*M. B.*, *N°* 27, 27 *January* 1950, *p.* 546) decrees that fowl plague and pseudo-fowl plague are classified among the contagious diseases referred to under article 319 of the Penal Code providing measures against offences relating to animal diseases. The government veterinary inspector may order that birds affected or suspected of being affected by one of the aforesaid diseases be destroyed. The order for their destruction is given by the burgomaster in writing to the owner or keeper of the animals, who is required to comply with the conditions as to time, place, etc. mentioned in the order. Should he refuse, the order for their destruction is carried out by the authorities at the expense of the owner.

The above Order has been repealed and replaced by another of the Regent dated 17 February 1950 (*M. B.*, *N°* 51-52, 20 *and* 21 *February* 1950, *p.* 1104), containing stricter provisions for controlling fowl plague.

The return the owner or keeper of poultry is required to make to the burgomaster includes all possible information relating to the probable origin of the disease, in particular, information relating to the purchase of the birds, visits of outsiders to the poultry farm, the packing house, baskets used for conveying food to the poultry, or live fowls. As soon as the first symptoms suggesting the disease are noted, the owner or keeper of the poultry is required to destroy one of the birds affected and to send it in a impermeable parcel by the most rapid means available to the Government Laboratory for Diagnosis and Veterinary Research at Uccle.

The burgomaster ascertains the boundaries of the seat of infection which should include at least the poultry buildings and adjoining enclosed lands and generally speaking all the places where the infected birds, their remains, or part of their remains have been, as also those of birds suspected of being affected by fowl plague or pseudo-fowl plague. The burgomaster will attend to having a notice put up at the entry to the seat of infection stating ' Fowl plague. Entry strictly forbidden to persons and animals not belonging to the farm '. The sequestration order extends to pigeons, dogs, and cats in the infected area.

On the proposal of the Government Veterinary Inspector the District Commissioner, or the Governor of the Province, may set up a protective belt round the seat of infection. It may include the Commune in which the seat of infection is located, the bordering communes, and even a more extensive area. A notice board will be set up on the border of the protective belt with a notice stating : ' Fowl plague. Circulation and trade regulated '. No living farm-yard bird or pigeon may leave a farm within the protective belt ; only dead poultry, dressed for consumption, may leave the area. The farmyard birds and pigeons of farms near a seat of infection will be enclosed or penned in, if it be feared that they have had access to the seats of infection, and in any case if the poultry runs are located at less than 100 metres from the seat of infection.

The Minister of Agriculture may extend to the protective belts the measures provided for the seat of infection. He may also take prophylactic meas-

ures of a nature suited to prevent the spread of the disease.

An Order of the Minister of Agriculture of 18 February 1950, (*ibidem*, *p.* 1107), taken under the provisions of the above Order, provides that the inoculation of poultry against fowl-plague or pseudo-fowl plagues must be carried out only by veterinary surgeons authorized for that purpose and subject to inspection by the government veterinary surgeons. The veterinary surgeons are required to use only living virus vaccines supplied by the Ministry of Agriculture. If the vaccination is made with living virus the owner or keeper of the poultry is required (1) to have all the birds on his farm vaccinated ; (2) to enforce, during the 21 days following the inoculation, sequestration measures ; (3) to keep during this same period a daily inventory of his poultry ; and (4) to refrain from incubating or selling for purposes of incubation the eggs collected during the first eight days following inoculation.

In view of the danger of the spread of pseudo-fowl plague, another Order of 8 February 1950, (*M. B.*, *N°* 42, 11 *February* 1950, *p.* 867), forbids placing live poultry on sale in fairs and markets.

Always with a view to the danger of the spread of fowl plague, an Order of 22 March 1950 (*M. B.*, *N°* 86-87, 27 *and* 28 *March* 1950, *p.* 2338), lays down temporary measures relating to the transport, hawking, and placing on sale of live and dead poultry. The transport, hawking, and placing on sale of live poultry is forbidden. That of dead poultry is only allowed when covered by a certificate delivered within the last 24 hours, by an approved veterinary surgeon, certifying that the farm from whence it comes is free from fowl plague and pseudo-fowl plague ; the said poultry must moreover be dressed for consumption. The carriers' bill of lading must state the date of transport, the number of birds carried, their total approximate weight, the farm from whence they come, and their destination.

LUXEMBOURG

A Ministerial Order of 1 March 1950 (*M. L.*, *N°* 16, 10 *March* 1950, *p.* 390) contains measures for the prevention of epidemics of fowl plague and its spread. Under these measures the importation, exportation, and transit of live poultry of all kinds, including live feathered game, are forbidden. Even one day old chicks are included in the prohibition. The importation of dead poultry and feathered game is provisionally allowed, but the packing material used for their transport may not be used again. The conveyance within the country and the placing on sale of live poultry of all descriptions and of feathered game at fairs, markets, prize and other shows, is forbidden. The importation of eggs for hatching and the export of eggs for hatching from areas proclaimed forbidden or under observation are forbidden. Provisionally the importation of cooking eggs and the exit of cooking eggs from areas under observation are allowed, but their exit from forbidden areas is still prohibited. Chicken feed may only be delivered in new paper bags.

III. - ECONOMICS AND MARKETS

(*a*) Customs Duties

BELGIUM

An Act of 22 December 1949 (*M.B.*, *N°* 12, 12 *January* 1950, *p.* 182) ratifies the Order of the Regent of September 11, 1948, repealing the suspension of import duties on sugar and sugared products.

Two Orders, on of the Regent of 25 February 1950 (*M.B. N°* 60, *March* 1 1950 *p.* 1449) and the other of the Minister of Agriculture (*ibidem p.* 1450), place a special import duty on fresh milk, cream, fresh and salted butter.

An Order of the Regent dated 14 March 1950 (*M.B. N°* 74, 15 *March* 1950, *p.* 1919) supplements the above Order of 25 February 1950, by placing a special import duty on hard and semi-hard cheeses. Their importation is subject to the preliminary presentation of a licence delivered after the Order came into force.

A Ministerial Order of 14 March 1950 (*ibidem p.* 1920) reduces the maximum amount of the special duty on cheeses as fixed by the Order of the Regent of the same date.

A Ministerial Order of 27 March 1950 (*M.B.*, *N°* 89, 30 *March* 1950, *p.* 2422) repeals the above Ministerial Order of 27 February 1950, and fixes the new rates of the special import duty fixed by the Order of the Regent dated 25 February 1950, on imports of fresh milk, cream and butter.

EGYPT

A Decree of 6 March 1950 (*J.O.E.*, *N°*. 28, 9 *March* 1950, *p.* 2) fixes as from 1 September 1950, the export duty on raw cotton at 4 Egyptian pounds sterling on each 100 kg. gross, and at 5 Egyptian pounds sterling on each 100 kg. gross of cotton waste, thus replacing the rules contained in the Decree of 12 April 1948, amending the export duties on raw cotton.

FRANCE

An Order of 7 January 1950 (*J. O.*, *N°* 7, 8 *January* 1950, *p.* 291) amends the import duties in the case of bulbed plants, tubers, bulbs, rootlets and rhizomes, hot-house plants, oleaginous seeds and

fruits, etc. It also re-introduces customs duties on caramelized sugar, including caramels for colouring.

An Order of 27 February 1950 (*J.O.*, *N°* 52, 1 *March* 1950, *p.* 2370) adjusts the customs tariff and re-establishes import duties on fresh and frozen beef, mutton, pork, horse, ass and mule flesh.

Another Order of 27 February 1950 (*ibidem*, *p.* 2370) re-introduces import duties on cattle and swine.

SWITZERLAND

A Order of the Federal Council of 20 March 1950 (*R. L. F.*, *N°* 8, 23 *March* 1950, *p.* 271) amends the additional import duties on barley, malt and beer, fixed in the Order of the Federal Council of 29 November 1938, in addition to the duties fixed in the usual customs tariff. The new additional duties come into force on 1 May 1950.

(*b*) Wheat

BELGIUM

An Order of the Regent dated 6 March 1950 (*M.B.*, *N°* 67, 8 *March* 1950, *p.* 1674), contains measures for regulating the importation, distribution and consumption of wheat. Importation is subject to a permit delivered by the Minister for Economic Affairs, in the form of Type *A* and Type *B* licences. Type *A* licence is delivered to professional importers, whereas Type *B* is delivered to approved commercial millers.

For the purposes of distributing the quota or a part thereof underwritten by the Belgian Government within the framework of the International Wheat Agreement the Minister is empowered to distribute the import quotas of wheat among importers and to distribute the quantities imported among commercial millers. All wheat imported under the International Wheat Agreement must be reserved for consumption in Belgium.

(*c*) Control of the trade in livestock and meat

FRANCE

The Act N° 50-346 of 19 March 1950 (*J.O.*, *N°* 69, 20 *and* 21 *March* 1950 *p.* 3127) repeals Act N° 47-650 of April 1947, introducing a buyer's card for professional purchasers of livestock and meat (See this *Bulletin*, 1947, N° 1, p. 81).

(*d*) Price control and price fixing

(i) *Rice and paddy*

FRANCE

An Order of 7 January 1950 (*J.O.*, *N°* 7, 8 *January* 1950 *p.* 311) regulates the market and the price of rice grown on French territory in the 1949-50 season. Rice growers are required to make a return of their crop not later than 1 February 1950, and to deliver to the pools the whole of their crop, after deducting the quantity required for seeding and the quota reserved for their own use, fixed at 10% of the lots of paddy delivered to the pools. The price on the farm for a quintal of paddy grown on French territories, of good and merchantable quality, of the 1949 crop, containing 13% moisture and 2% impurities, is fixed at 8,250 francs. The normal price at which the paddy is sold by the pools during the whole season is 8,560 francs.

(ii) *Sugar*

FRANCE

An Order of 29 December 1949 (*J.O.*, *N°* 1, 1 *January* 1950, *p.* 261) fixes the new maximum prices for the sale of sugar of the 1949-1950 season.

IV. - STATISTICS

ALGERIA

An Order of 14 January 1950 (*J.O.A.*, *Ist Part*, *N°* 6, 20 *January* 1950, *p.* 154) provides for an agricultural census in 1950, to be taken in the three Departments and territories of the South to ascertain the structure of individual and collective farms, the means of production (labour, implements, equipment) and the production of animal and vegetable products. The census will cover all branches of cultivation of the soil, inclusive of forestry, and will also extend to fisheries. It may moreover be supplemented by enquiries into prices, wages, agricultural industries, etc. The census will be taken by means of obligatory individual returns made by farmers, whatever be the nature and periodicity of their animal and vegetable production. The keepers of domestic animals are also required to make returns. As an exception, when local conditions require it, other methods may be used.

The preparation of the census and the control of the operations are entrusted to the Inspector General for Agriculture, but the actual work is carried out by the different Services and Directions concerned. More especially the General Statistical Service of Algeria will give expert assistance in all the stages of the census.

BELGIUM

An Order of the Regent dated 20 February 1950 (*M.B.*, *N°* 63, 4 *March* 1950, *p.* 1566) contains measures for the preparation of the general census of agriculture of 15 May 1950. It requires that the census returns of cultivated lands, wooded parcels, and ponds be made on 15 March 1950. The Communal Administrations are required to post up to the date of 15 March 1950, the card-index of farmers drawn up under the Ministerial Order of 1 March

1949 (see this *Bulletin*, 1949, N° 2, p. 179), for the purposes of the census of 15 March 1949 of cultivated lands. They are also required to start by the 1st of March, 1950, drawing up a list of the names of the owners of woods and ponds taken from the land-register.

SWITZERLAND

An Ordinance of 17 March 1950 (*R.L F.*, *N°* 8, 23 *March* 1950, *p.* 273) contains measures for the 1950 livestock census. On 21 April 1950, horses, cattle, pigs and poultry will be counted in a certain number of Communes designated in advance. The Cantons that so desire may replace the partial count by a complete census.

The Federal Bureau of Statistics will make the census of livestock, and will name the typical communes in consultation with the Cantonal Authorities. It draws up the census forms, gives the necessary instructions, and supplies the Cantonal and Communal Authorities with the necessary printed forms. The Federal Bureau of Statistics also inspects the forms filled in and returned, and compiles and published the results.

V. - FORESTRY

BELGIUM

An Order of the Regent dated 20 February 1950 (*M.B.*, *N°* 71, 12 *March* 1950, *p.* 1811) contains measures for carrying out an annual statistical investigation of production in the wood-processing industry and allied industries. The National Institute of Statistics is instructed to compile each year the statistics of production in those industries as on 31 December. The statistical data are compiled on the basis of information collected through the issue of a certain number of questionaires annexed to the Order. All industrial establishments engaged in work connected with the wood-processing and allied industries are required to fill in the questionnaires relating to them and to return them not later than 31 January of each year to the National Institute of Statistics.

VI. - FISHERIES

ALGERIA

An Order of 7 March 1950 (*J.O.A.*, *Part I*, *N°* 21, 14 *March* 1950, *p.* 377) forbids the use of ring-nets along the Algerian coasts.

BELGIUM

An Order of the Regent dated 22 February 1950 (*M.B.*, *N°* 70, 11 *March* 1950, *p.* 1782) amends the Order of 20 March 1949 regulating shotten herring fishing (see this *Bulletin* 1949, N° 2, p. 181). These amendments extend the exceptions to the legislation in force to cover also the sprat season. Moreover the 200 h.p. limit is again reduced to 120 h.p. Thus, during the sprat and shotten herring seasons, and until the 1st of March each year at latest, fishing in territorial waters with motor fishing boats of more than 120 h.p. is forbidden.

FRANCE

A Decree of 31 December 1949 (*J.O.*, *N°* 7, 8 *January* 1950, *p.* 296) has set up fish preserves in those stretches of water courses indicated in the Statement annexed to the Decree. The preserves have been set up for fish breeding for a period of 5 years as from 1 January 1950. The boundaries of the preserves are made visible on each bank, up-stream and down-stream, by stakes, plates, or posts stating that fishing is strictly forbidden.

Another Decree of 20 January 1950 (*J.O.*, *N°* 28, 2 *February* 1950, *p.* 1238) has set up fish preserves in canals and navigable water courses. A table annexed to the Decree indicates the stretches of the canals and navigable water courses reserved for breeding fish over a period of 5 years as from 1 January 1950. During the close season for fishing it is forbidden to let geese, ducks, swans, and other aquatic birds who destroy fry occupy those stretches of water courses or canals reserved for fish breeding.

An Order of 3 February 1950 (*J.O.*, *N°* 36, 10 *February* 1950, *p.* 1635) raises the fee for the delivery of the certificate of inspection of the manufacture of canned fish, shell-fish and other sea food, to 10 francs as from 1 January 1950. The Scientific and Technical Sea Fisheries Office assigns part of the proceeds from the sale of these certificates to the Confederation of the Industries for handling Sea Fish Products, so as to refund that body for the expenses it incurs in carrying out the inspections it effects on behalf of the Fisheries Office. The amount thus paid over is fixed at 4 francs for each certificate of inspection.

Another Order of 6 February 1950 (*ibidem*, *p.* 1635) fixes the form and conditions for the use of the inspection certificates issued for preserved fish and other sea food.

Decree N° 50-214 of 6 February 1950 (*J.O.*, *N°* 40, 15 *February* 1950, *p.* 1826), extends to the cultivation of shellfish the provisions of the Ordinance of 14 August 1945, on the reorganization of Sea Fisheries. The organization of shellfish cultures includes local Committees and if need be regional ones, and an inter-professional Committee for oyster-beds and sea-fish cultures, being part of the Central Committee on sea fisheries.

PORTUGAL

A Decree N° 37 : 753 of 10 February 1950 (*D. d. G.*, 1*st Series*, *N°* 29 10 *February* 1950, *p.* 89), determines the characteristics and the rules for the preparation of fish-meals for use other than as fertilizer. In the case of fish-meals used as manure, the legislation on manures is applicable.

VII. - RURAL WELFARE

(*a*) Domestic re-equipment aid

BELGIUM

The Act of 21 January 1950 (*M. B.*, *N°* 25, 15 *January* 1950, *p.* 479, extends to agricultural labourers the domestic re-equipment aid, subject to the conditions laid down in the Decree Law of 15 November 1945, setting up a national fund for domestic re-equipment aid to workers. For the purposes of the Act the term 'agricultural undertakings' includes agricultural undertakings in the strict meaning of the term, stock-breeding establishments, fishing undertakings, and all other undertakings connected with agriculture, to the exclusion however of horticultural and forestry undertakings.

An Order of the Regent dated 2 March 1950 (*M. B.*, N° 65-66, 6 *and* 7 *March* 1950, *p.* 1642), grants an exceptional allowance in lieu of a domestic re-equipment allowance, to agricultural labourers and their widows who are entitled to a supplementary pension. The exceptional allowance is fixed at 1,500 francs in the case of a married man living with his wife and enjoying the supplement to the old age pension ; 1000 francs in the case of other persons enjoying a supplement to the old age pension, or to a woman entitled to the survival supplement, who was born before 1 May 1883 ; 500 francs in the case of a woman born between 30 April 1883 and 1 March 1893, etc.

(*b*) Accident insurance

ITALY

The Act N° 64 of 30 February 1950 (*G. U. N°* 63, 16 *March* 1950, *p.* 794) amends the Act on compulsory insurance of agricultural workers against accidents. These amendments raise the daily compensation for complete temporary disability caused by an accident while engaged on agricultural work and also the compensation in case of permanent disability. The allowances made in case of death to the surviving spouse have also been raised. To facilitate the investment of the money in land, or in the improvement of farm holdings, or in the purchase of farm machinery to be used on the holding, all persons in receipt of an annuity for permanent disablement as the result of an accident while engaged on agricultural work, may, under certain conditions, redeem the whole or part of the annuity assigned them.

(*c*) Agricultural co-operative societies

FRANCE

Act N° 50-3 of 4 January 1950 (*J. O.*, N° 4, 5 *January*, 1950, *p.* 179) extends the periods within which Agricultural co-operative Societies are now required to deposit their application for the approval of their articles of association and for bringing them up to date. Agricultural Cooperative Societies and their Unions that have already been approved, must bring their articles of association into conformity with the provisions of the Ordinance N° 45-2325 of 12 October 1945. This must be done not later than 31 December 1950, and the articles of association thus amended must be submitted to the qualified approval committee. Moreover, these same Cooperative Societies and their Unions, duly formed prior to 17 October 1946, which have not yet received approval, must send in their application for same not later than 31 December 1950.

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